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THE  
NAVAL SERVICE  
OR  
OFFICERS' MANUAL.



THE  
NAVAL SERVICE

OR  
OFFICERS' MANUAL

FOR EVERY GRADE IN HIS MAJESTY'S SHIPS.

25  
BY  
CAPT. W. N. GLASCOCK, R. N.

VOL. I.

LONDON  
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DEDICATED,

WITH SINCERE RESPECT,

TO

THE OFFICERS

OF

HIS MAJESTY'S NAVY,

BY

THE AUTHOR.



## ADVERTISEMENT.

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A WORK embracing the several subjects connected with naval duties, and nautical affairs in general, has long been sought by the Officers of His Majesty's Navy, and others interested in maritime pursuits. Indeed, nothing in the shape of a Sea-Officer's Manual has before appeared. The present publication, it is hoped, will not altogether fail in supplying the deficiency.

In the composition of these volumes, conciseness and classification have been particularly studied.

A few anomalies and discrepancies are pointed out, in the hope of preventing their being longer overlooked by authorities.

The Author takes this opportunity to return his best thanks to Sir John Franklin, for his paper on "CHRONOMETERS;" to Captain James Clark Ross, for his article on "MAGNETISM;" and to Lieut. H. Raper, for the ILLUSTRATIVE DESIGNS, from which the engravings in these volumes are taken.

## VOLUNTEER.

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THE Lords Commissioners of the Admiralty approve the entrance of the VOLUNTEER into His Majesty's Naval Service at the age of thirteen.\*

At these years it cannot be expected that any extraordinary progress should have been made in the academical studies of the naval novice; but, when he is destined for His Majesty's service, the parents or guardians of the youth should take especial precaution that he be not deficient in arithmetic, geography, and astronomy. A proficiency in the French language is also desirable. Nor should

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\* The last Regulation which relates to the "entry" of Young Gentlemen will be found in an official Memorandum at the end of this Chapter.

the naval aspirant be ignorant of the rudiments of drawing. This, though seldom considered as more than a refined accomplishment, becomes to the sea-officer an acquirement of the first importance.\*

### FIRST EMBARKATION.†

ON his first embarkation, the Volunteer will have little else to do than to “keep his eyes and his wits about him.” The First-Lieutenant or Commanding Officer will hand him over to the Caterer of the Midshipmen’s mess. A steady man will be appointed to sling his hammock, and to

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\* While speaking of the great advantages arising from general intellectual culture among young gentlemen in the service, let not the advice of a distinguished Admiral be forgotten—namely, that to other studies should be added the acquirement of a knowledge of scriptural history, ancient history, and of the records connected with the rise and progress of the British colonies.

The author himself found the study of “Vattel’s Treatise on International Law” of great service to him in the discharge of a delicate and onerous duty.

† Previously to a first fit-out, it is recommended to the parents of the young gentleman to consult the Captain or the First-Lieutenant of the ship he is about to join, as to particulars relative to the dimensions of his chest. Before now, young gentlemen have embarked in *Ten-gun brigs* with chests of such unreasonable size as to preclude the possibility of their descending the hatchways of the vessel. For the sake of uniformity and stowage, it were desirable that one universal size were established in the service.

take it up and down morning and evening. A private marine (provided the man's services be voluntarily obtained) may be also permitted to act in the capacity of the young gentleman's servant. With this indulgence\* — for such it must be ever considered—no excuse can be offered, nor any taken, for negligence or uncleanliness in the youngster's personal appearance.

#### MORNING ABLUTIONS.

By seven bells — half-past seven — his morning ablutions must be completed, and care taken that no washing nor “*toilet*” utensils—towels,† basins, boot-jacks or brushes—be found astray on the decks, or “adrift” in the vicinity of the gun-room or steerage. And here the novice must clearly

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\* This indulgence has, of late years, become very prevalent in the Navy. Young Gentlemen are, however, apprized that the contract between the man and master is altogether of a *private* nature, and not recognised as a duty devolving on the former. A monthly remuneration—from three to five shillings—is the customary sum paid for the services of the party employed.

† In some ships a line is allowed to be triced up between the main and mizen rigging for the purpose of drying the Midshipmen's towels. This practice is preferable to replacing them in a damp condition in their chests.



understand that unless he present himself at the breakfast-table properly attired, he will forfeit his morning meal.\*

#### SALUTE TO THE QUARTER-DECK.

WHENEVER he ascends the quarter-deck, which at all times is to be considered and respected as the King's Parade, he is strictly enjoined to observe the customary salute of the service. This consists in raising the hat from the head, or, as it is technically termed, "touching it," immediately upon stepping on the deck.

#### SCHOOL HOURS AND STUDIES.

IF the ship bear a Schoolmaster,† the hours from nine to half-past eleven in the forenoon will be

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\* Attention to the gentlemanly order of the Midshipmen's Mess should be the Caterer's principal aim. In line-of-battle ships, it rivals ward-room establishments in respectability and order. In smaller vessels, from local and other causes, Midshipmen's Messes are not altogether so striking in appearance. Nevertheless, the same rules are requisite.

† Upon the advantages of uniting the two situations of Chaplain and Schoolmaster, the reader is referred to an able paper which appeared in the "*United Service Journal*" of October, 1830.

exclusively devoted to the study of geometry and navigation;\* but a close application to the mathematics is particularly recommended. Independently of its practical utility in demonstrating the rules common to navigation and nautical astronomy, a certain degree of mathematical learning imparts clearness and exactness to all our conceptions.

“ Without presuming to dictate the studies,” says an able professional writer, “ which are most essential to his improvement, we would wish to recommend such as are most suitable to the bent of his inclination. Astronomy, geometry, and mechanics, which are in the first rank of science, are the materials which form the skilful navigator and superior seaman. The theory of navigation is entirely derived from the two former, and all the machinery and movements of a ship are founded upon the latter. The action of the wind upon the sails, and the resistance of the water at the stem, naturally dictate an inquiry into the property of

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\* A concise practical work on Navigation has been long sought in the Service. It is to be hoped the day is not distant when such a production will appear. Ridley is, at present, considered to be the most useful book for beginners.

solids and fluids; and the state of the ship, floating on the water, seems to direct his application to the study of hydrostatics and the effects of gravity. A proficiency in these branches of science will equally enlarge his views with regard to the operations of naval war, as directed by the efforts of powder and knowledge of projectiles. The most effectual method to excite his application to those studies is, perhaps, by looking round the Navy, to observe the characters of individuals. By this inquiry, he will probably discover, that the officer who is eminently skilled in the sciences will command universal respect and approbation; and that whoever is satisfied with the despicable ambition of shining the hero of an assembly will be the object of universal contempt. The attention of the former will be engaged in those studies which are highly useful to himself in particular, and to the service in general. The employment of the latter is to acquire those superficial accomplishments that unbend the mind from every useful science, emasculate the judgment, and render the hero infinitely more dexterous in falling into his station in the *dance* than in the line of battle."

## LEARNING TO KNOT AND SPLICE.

THE Captain who studies the welfare and advancement of those committed to his charge, will appoint a steady petty-officer, a thorough seaman, to teach the Young Gentleman the art of knotting and splicing, and general rudiments of rigging. Professional deficiency is soon detected by the officers; nor does it pass unobserved even by the foremastmen. The seaman knows well when it is the *seaman* that commands. A seamanlike order is promptly and cheerfully obeyed. A "lubberly" mandate produces disgust, dissatisfaction, and unwillingness to work—too often an irretrievable loss of valuable time, and invariably a universal feeling of contempt (however hidden and suppressed) for the officer commanding.

## ADDRESS EVERY MAN BY HIS NAME.

AND here may be offered a further friendly admonition. Upon whatever occasion, public or private, the foremastman be addressed, let him be called by his name. If unacquainted with that, let some

kind or encouraging epithet be adopted. The appellative of "*my man*" can offend no man, whilst that too frequently applied epithet "*You, sir!*"\* is obnoxious to the meanest boy. Not that the vulgar practice of courting popularity is here advocated. Affected humility may be said to be meanness personified; whilst low familiarities debase, and at once destroy every feeling of respect. The instant an officer descends to be familiar with the men his authority sinks—neither can he expect nor exact obedience.

#### TECHNICAL TERMS.

THE volunteer must use every endeavour to acquire a ready acquaintance with technical terms—the

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\* A moral may be found in the following anecdote:—When the author served with the late Lord Collingwood, a Lieutenant of His Majesty's Ship C—— had the presumption, in the presence of the Admiral, to apply the phrase "*You, sir!*" to one of the afterguard on the quarter-deck. The Admiral reiterated the offensive appellative "*You, sir!*" "*You, sir!*" The Lieutenant, at a loss for the Admiral's meaning, approached his superior, hat in hand. "*You, sir!*" continued the Admiral, emphatically repeating the obnoxious phrase as he stared the Lieutenant full in the face—"How do you, Sir, like to be *you-sir'd*? That man has a name as well as *you*, Lieutenant ——."

The author was a boy at the time, but from that period to the present he has invariably *forgotten* to "*you-sir*" a man.

names severally applied to the standing, and running rigging. Nor should apprehension of ridicule or laughter deter him from pursuing his purpose. The merry Mid will have his joke—play his pranks—persuade the uninitiated lad that “gooseberries grow in the main-top” — that “Flemish horses are found aloft,” and that “dead men frequently dangle from the yards.” In a word, the novice must not be unprepared to expect some practical experience in the “practical joke.” But all must be taken in good part. The slightest betrayal of sullenness, petulance, or passion, will only produce an increase of banter. In short, the better the display of temper, the sooner will terminate the waggish war.

#### PROFESSIONAL ATTAINMENT.

NOTHING is sooner discernible, nor sooner appreciated, in the naval service, than an early desire to attain professional knowledge. This ready disposition is at once “seen, felt, and understood,” by all on board—by the men, no less than by the officers. The superior then becomes the encouraging instructor; the inferior, the voluntary

tutor. "That young gentleman," a petty-officer will observe, "is determined, I see, to be a seaman. Come, sir," will he add, accosting his youthful superior in a tone of becoming respect—"Come, sir, *I'll* shew you the use of that rope, and the way that it leads aloft." Such opportunities to acquire a practical acquaintance with the standing rigging and the running ropes ought rather to be sought than shunned.\*

Should the volunteer embark on board a vessel newly commissioned, he must avail himself of every advantage which first equipments invariably afford. By close observation and well-timed inquiry, considerable progress may be made in the rudiments and practice of "rigging." Intelligent and observing lads have, before now, *previously to leaving* port, been able to answer all the nice questions

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\* "Unless the Midshipman," observes a professional writer, "has an unconquerable aversion to the acquisition of those qualifications which are so essential to his improvement, he will rarely want an opportunity in making a progress therein. Every step he advances in those meritorious employments will facilitate his accession to the next in order. If the dunces who may be his messmates are rattling the backgammon dice, roaring bad verses, hissing on the flute, or scraping discord from the fiddle, his attention to more serviceable studies will sweeten the hours of relaxation."

touching the "clothing" of a battle ship's bowsprit; and the son of a gallant and distinguished officer in the service, not more than four months "borne on the books," became, from observation alone, perfectly acquainted with the principle and practice of shifting a topmast.\*

#### PUTTING FIRST TO SEA.

SEA-SICKNESS. — The best specific that can be offered for this unmanning malady is to persevere in a spirited determination to conquer it. Lying in bed, or lounging below, will be of no avail. On the contrary, such practices tend only to prolong suffering, and debilitate the body. Howsoever "sick," determine to keep the deck, inhale the open and sea-bred breeze, and, though an awkward stagger be discernible in the step, persevere in the "walk" fore-and-aft. † Sea-legs will imperceptibly come, and sea-sickness gradually subside.

GOING ALOFT. — As soon as "sea-legs are

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\* This fact was, by his captain, recorded in the young gentleman's official certificate.

† Whilst, at the patient's expense, healthy and hearty midships are cracking occasional jokes, the unpitied sufferer may be cracking ginger-bread nuts, an excellent specific for sea-sickness.



found," and sea-sickness is fairly overcome, the young gentleman should habituate himself in going aloft. But, in ascending the shrouds, caution is emphatically directed against trusting too much to the ratlings of the rigging (the steps of the ladder.) The shroud, and *not* the ratling, should be grasped by the hand. Should the seizing of the ratling go, or the rope be rotten, the body may lose its balance, and, in all probability, a promising life be lost to His Majesty's service.

#### WALKING THE WEATHER-SIDE.

ON no occasion are young gentlemen to walk the Weather-side of the quarter-deck. At sea, the Lee-side becomes the midshipmen's parade. When young gentlemen creep over to windward, to accompany their superiors in their step, (which, since the peace establishment, has become so prevalent a practice,) they infringe the rules of the service, and may be said to be "treading on tender ground."

#### LOG NOT IN ARREAR.

THE volunteer should not allow his log to be ever in arrear, but should commit to writing (according

to the formula established) the diurnal proceedings of the ship. A few minutes in the evening may be advantageously devoted to this purpose. The volunteer's log may be called for *inspection* at a very unexpected period; the Captain may require its production at a moment's notice: hence the necessity of the foregoing caution.

ILLUSTRATIVE SKETCHES.—Should a proficiency in drawing be already made, or the young gentleman be at all accustomed to sketch from nature, he is not only recommended to practise his pencil, but to let no opportunity pass, when coasting, or “running along the land,” of taking various views, for the purpose of introducing illustrative sketches into his log. A well-preserved and neatly-written log, containing well-executed views, will not fail, on the day of trial, to procure for the young gentleman an official tribute of praise and recommendation.

#### WATCH, STATION, & QUARTER BILLS.

Of each of these indispensable “bills” the young gentleman will procure an early copy. The prevalent practice of borrowing the book of another,

with a view to deceive the superior, or to avoid being detected in dereliction of duty, will ensure to the borrower *nominal* notice in the “*bad-books*” of the First-Lieutenant. Refusal of “leave” becomes, in port, an unpleasant penalty. This hint, it is hoped, will suffice.

#### DEMEANOUR AT CAPTAIN'S TABLE.

IN dining with the Captain, or with the ward-room officers, it were well to bear in mind the admirable precept of the celebrated Paley—“Dependance and obedience belong to youth: modesty is one of its chief ornaments, and has ever been esteemed a presage to rising merit.” Not that an assumption of boyish bashfulness can be ever advocated; nor is a fawning, vulgar servility of tone more to be avoided than a forward familiarity of mien. In a word, a natural amenity of manner, added to a uniform observance of deferential respect for superiors in *age*, as well as in station, will always indicate the well-bred youth, and, at least, prove that there is no misnomer in the *old* official designation of the YOUNG GENTLEMAN.

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ADMONITORY HINT.—Should the Captain propose to his youthful guest an *inquisitive* trip upon deck, to ascertain the quantity of sail set, the direction of the wind, or the position of the “ship’s head,” the young gentleman will do well to take the *hint*—return a report, and *retire* in time.

#### KEEPING WATCH.

UPON the size and rate of the ship will depend the necessity of compelling the volunteer to “Keep his Watch.” In small vessels the complement is very limited; consequently, as there are “no more cats than can catch mice,” the services of young gentlemen are often put into early requisition.

An intelligent officer and deservedly-popular author\* has said, that “to a lad who has health and spirits, keeping watch is rather agreeable than otherwise.” In saying this, he “speaks from twelve years of almost uninterrupted practice,” and declares, upon the whole, that “its pleasures outweigh its annoyances. There is no opiate,” continues the Captain, “that ever was devised, which gives

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\* Captain Basil Hall.

such hearty relish to sleep as a good four-hours' night-watch. Without refining or philosophizing too deeply, every one, I am sure, who has tried the experiment, will recollect the sort of complete self-satisfaction with which he has 'turned in,' after having gone through his work, and stripped off his dripping clothes; still less will he forget the delighted kind of hug which he has bestowed upon himself when fairly under the blankets. All the world is then forgotten; the gale may be rising, the ship in no great safety, the labours of the night just beginning—no matter, his watch is out—his task is done. 'I'll go to sleep,' he says; and, sure enough, a young midddy, after the *weary* watch is out, lies down as perfect a personification of Shakespeare's ship-boy as imagination could desire."

This is all very well in its way—prettily expressed, and admirable reading. But it may be safely asserted, that *nine* out of ten youngsters will prefer the precept to the practice. Moreover, in this mode of ensuring sleep, it may be well to observe, that it is the *Captain*, and not the "Middy," that now *composes*. It is not disputed that "keeping watch" ensures the certainty of sleep—stern Nature

constantly proves the reverse, despite, too, of discipline the most rigid and severe.\* To her overpowering spell the youngster yields, and, by stealth or stratagem, "sleeps on his watch," stretched on the wet or water-sodden plank. Hence it is, possessed of this fact, that the fullest possible dispensation of drowsy service is advocated. How frequently the kind-hearted Lieutenant is heard to exclaim, "Go to bed, youngster,—you only knock your shins against the carronade slides."

In the practical tuition of keeping watch, the boy may be gradually "broken in." One night he may keep the first two hours of the "First-Watch;" another, part of the "Middle," and, during the season of Summer, the "Morning Watch" entire—the last will conduce to his health. In the above arrangement, a conditional compact may be made between the youngster and the officer of his watch—the former to understand that upon

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\* In the juvenile days of the author, when young gentlemen were surprised or detected in deck-somnolency, a couple of tall topmen were directed to introduce them to the weather-main-rigging. For one hour, four ratlings high, and face to windward, were they compelled to remain in this *pleasant* position. This penal practice has become obsolete, and now unknown in His Majesty's Service.

every occasion of a "*bad relief*" the indulgence becomes null and void.

By such like considerate system, both the task, and the trial of "keeping watch and *awake*," will alike become progressively lighter, a willing ear will be lent to the quarter-master's call, and, though last, not least in professional value, the praiseworthy practice of a "*quick turn-out*"\* will habitually follow.

#### PECUNIARY MATTERS.

As order and regularity are of the greatest necessity in money transactions, and as young gentlemen are too apt to be careless in this matter, their attention is directed to the following method, by which much perplexity may be avoided.

Instead of resorting to the Captain† for supplies of money without the precaution of inquiring previously whether he is at leisure or not, the young gentleman is recommended to send the steward to the cabin to ascertain whether it is convenient to

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\* The "*Quick Relief*" has been frequently rewarded by an early return to bed.

† In some ships the Purser undertakes the management of the young gentlemen's pecuniary matters.

the Captain to see Mr. ———. In the event of an affirmative answer, the young gentleman may present himself, and make his request; but he should always have with him his account book, in which the sum supplied should be immediately entered. This book and the Captain's, will, with such care, be a check each on the other, a great advantage to both.

#### EPISTOLARY CORRESPONDENCE.

It is much to be regretted that young gentlemen do not oftener take advantage of the enviable opportunities, afforded by visits to various parts of the globe, of writing letters to their friends. Much of the rare intellectual power possessed by Lord Collingwood was, in all probability, derived from his early custom of communicating to his relations at home whatever he had observed in the course of his many voyages. The young gentleman is therefore recommended to practise letter-writing, which will not only sharpen his powers of observation, and induce him to be always on the watch for subject-matter, (thereby storing his mind with useful facts,) but will be an admirable discipline



for his mental faculties, inasmuch as the habits of literary composition, necessary even in the most familiar correspondence, will impart order and strength to his ideas, and give him facility of expression both in writing and speaking; an accomplishment highly necessary in his future elevation to rank. What delight, too, will the receipt of such letters give to the parents of the writer, who, in the anxiety of their hearts, may attribute long silence to some disastrous occurrence, or will be sorely mortified if it be broken only through the medium of a *stamp*, beginning with the words "Three months after date!" a mode of correspondence too exclusively adopted by the thoughtless, the unfeeling, the selfish, and the idle.

#### INDULGING IN THE MARVELLOUS.

IN concluding the Chapter of the Volunteer, a legacy is left in the shape of an admonitory moral. The bequest is valuable: it comes from the well-known Moral Philosopher PALEY.

"Many people indulge, in serious discourse, a habit of fiction and exaggeration in the accounts they give of themselves, of their acquaintance, or of

the extraordinary things which they have seen or heard; and so long as the facts they relate are indifferent, and their narratives, though false, are inoffensive, it may seem a superstitious regard to truth to censure them merely for truth's sake.

“In the first place, it is almost impossible to pronounce before hand, with certainty, concerning any lie. *Volat irrevocabile*, and collects sometimes accretions in its flight, which entirely changes its nature.

“In the next place, this liberty in conversation defeats its own end. Much of the pleasure, and all the benefit of conversation, depends upon our opinion of the speaker's veracity, for which this rule leaves no foundation. The faith indeed of a hearer must be extremely perplexed who considers the speaker, or believes that the speaker considers himself, as under no obligation to adhere to truth, but according to the particular importance of what he relates.

“But besides and above both these reasons, *white* lies always introduce others of a *darker* complexion. I have seldom known any one who deserted truth in trifles that could be *trusted* in matters of importance.”

THE last Regulation which relates to the "entry" of Young Gentlemen will be found in the following official

## MEMORANDUM.

*Admiralty, 11th Oct. 1834.*

It is the direction of my Lords Commissioners of the Admiralty that in each of his Majesty's ships, commissioned after the date hereof, bearing in their complements one or more Volunteers of the First Class, only *one fresh entry into the Service* shall be made ; but the remainder shall be selected, where there are more than one, by the respective Captains or Commanding Officers, from Young Gentlemen who have already been in the Service, and submitted for the approbation of their Lordships.

Ships now in commission are not to be allowed any fresh entry of Volunteers into the Service.

By command of their Lordships,

JOHN BARROW.

To all Flag Officers, Commanders-in-Chief,  
Captains, and Commanding Officers of  
His Majesty's Ships and Vessels.

## M I D S H I P M A N.\*

## PRELIMINARY REMARKS.

THE primary injunction imposed upon the Midshipman will be, in the moral acceptation of the term, the study of his *station*,—to learn, to feel, to encourage and uphold the sentiment, that, though subordinate his office, it is the office of a Gentleman—a gentleman entitled to trust, and not infrequently fulfilling a post of importance.

Obedience being the “soul of the service,” it should be with the Midshipman a fixed maxim, that “He who knows not how to *obey*, will never know how to *command*.” Guided by this simple aphorism,

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\* The Midshipman is requested to peruse the preceding Chapter.

he can err little in his professional progress: it will shape for him, as it were, his cardinal course, point his polar star, and ultimately indicate the "*True North*" of the Naval Needle.

## GENERAL DIRECTIONS.

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THE necessity of uniform attention in the due discharge of general duty must be manifest to every capacity. But, as buoys and beacons are placed where only sunken and hidden dangers lie, so here may be given a few "directions" and "leading marks" to avoid the shoals and shallows of the quarter-deck.

### DEMEANOUR ON THE QUARTER-DECK.

THE Midshipman is never to walk with his hands in his pockets; neither is he to permit himself "to skylark," as it is vulgarly termed, or to hold jocular discourse on the quarter-deck. Young gentlemen addicted to lounging on the hammocks, or disturb-

ing their stowage in the nettings, should be made aware that these practices are misdemeanours seldom overlooked by the First-Lieutenant.

#### EXECUTION OF ORDERS.

THE midshipman is to give to all around a quick eye and an open ear, and never to cause the officer in command to repeat his orders.

When an order is given, the midshipman is neither to stand still, nor to pace leisurely along the deck for the mere purpose of repeating mandatory sounds;\* nor is the part of "walking speaking-trumpet" ever enacted by the midshipman of emulous mind. The moment an order has escaped the lips of his superior, he who seeks or expects official favour will *run*, and not *walk*, to carry into execution the service required.

#### EVOLUTIONARY DUTIES.

IN the performance of evolutionary duties, the midshipman ought not, on the completion of mi-

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\* In well-regulated ships this practice is considered inconsistent with discipline. One voice and one pipe are better than fifty repetitions of senseless sounds.—Silence is the soul of subordination.

nor service, to permit the men to remain inactive. He should encourage alacrity, divide them on the different ropes, and, with a silent and systematic tact, despatch them to that part or position of the deck where physical strength is most required.

#### STOWING HAMMOCKS.

NOTHING is more indicative of "order," or adds more to the smart and favourable appearance of a vessel-of-war, than a neat and symmetrical stowage of hammocks.

In the superintendence of this necessary duty, midshipmen are often at fault, forgetting that negligence in the performance of this service is seldom permitted to pass unnoticed.

In the stowage of hammocks, the midshipman should stand on the *opposite* side of the deck, a position which will enable him to preserve a symmetrical line, and guide and direct the "stower" in his progress fore-and-aft the netting. Midshipmen are also enjoined to be careful that the hammocks of the men be properly lashed-up. Defaulters



in this particular should be reported to the First-Lieutenant.\*

#### DISPUTATIONS ON DUTY.

HE must never permit himself to dispute with his superior on "points of service;" nor should he reply to reproof. Upon occasions of receiving censure, silence will befriend him most.

#### REMARKS ON SUPERIORS IN OFFICE.

IT is not so much a matter of facility as the midshipman or mate may imagine, to regulate, direct, or preserve the internal economy of a vessel-of-war, and therefore it is that gentlemen are required to refrain from making remarks touching the conduct or orders of superiors in office. Instead of becoming the self-constituted censor, or enacting the part of the sea *Zoilus*, the midshipman will best consult his own interest when he confines to silent thought his strictures on others. "If he be nothing unless

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\* In piping down hammocks, gentlemen are cautioned not to permit the men to throw them on the decks.

critical," let him criticise his own pretensions. Possibly he may then discover that unbecoming censure and unwarrantable self-sufficiency invariably go hand-in-hand.

#### HASTY COMPLAINTS.

HASTY complaints are to be avoided; they are seldom supportable. Before making his last official appeal, the midshipman is recommended to examine well his own conduct, and consult an elder and more experienced messmate, ere he proceeds to the quarter-deck.

#### OATHS AND IMPRECATIONS.

THE vulgar practice of swearing, of uttering profane imprecations and opprobrious epithets in the exercise of official duties, warrants a suspicion that he who indulges in them feels it necessary to cloak by bravado his own insufficiency. "Shew me a confirmed and habitual swearer," said a celebrated Admiral, "and I'll shew you a bad officer."

Seamen soon become callous to repeated imprecations: these, indeed, strike the ear, but produce no effect on the mind. Were it only in considera-

tion of the mere idleness of the habit, (to say nothing of the wretchedness of the taste,) it would be well to discontinue the practice. How frequently have such words been said *aside*, "Never mind *him*,—he's all froth and fire,—it's not in his *natur* to speak to a man like a man."

#### ABSENCE WITHOUT LEAVE.

IN this misdemeanour, midshipmen are not recommended to indulge. It has ever been deprecated as a vile and "privateer practice," from which may be traced the far-fetched phrase, "taking French leave." Practitioners, however, of the present "free-and-easy" school, preferring the English to the French allusion, designate the "liberty," "ashore on the *new Act*." But the act is an old one, and has seldom passed with impunity.\*

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\* A midshipman of a frigate in which the author had served was in the constant habit of indulging in this Gallic liberty. The First-Lieutenant, aware of his freaks, for four or five successive nights, permitted him unmolested to follow his "fling." The nocturnal roamer would return on board about six in the morning, entering one of the bridle ports on the main-deck. The First-Lieutenant was something of a wag, and had planned for the fearless offender a punishment which the latter was little prepared to expect. At an early hour in the morning, the midshipmen were summoned on deck—Watch, or no watch, all were required to appear on the

## EXERCISING THE LEAD.

THE midshipman should occasionally practise the art of heaving the lead, and make himself thoroughly acquainted with the several "marks and deeps," and the mariner's method of holding and coiling the line. Deficient in these practical matters, a midshipman, after some three years' service at sea,

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**King's Parade.** The master-at-arms, the corporal of marines, together with nine rank and file, regularly accoutred with cross belts, and armed with drawn bayonets, had been previously planted in line in the immediate vicinity of the cook's coppers. As usual, boarding on the bow, and entering the "bridle," attired in top-boots and his shore-going suit, the new actor was not a little surprised to find, drawn up in full array, a guard of honour ready to receive him in the galley.

In accordance with his private instructions, the master-at-arms proceeded to tap the defaulter on the shoulder, intimating to him that he was already his prisoner, and requiring him forthwith to "fall in" in the line for military escort. "Right-about face! march!" cried the commander of the "party," parading his prisoner twice around the main-deck, gangways, fore-castle, and quarter-deck, in the presence of a numerous assemblage of boys, blue-jackets, marines, mates, and midshipmen, bursting their sides with suppressed laughter at this ludicrous scene. As soon as his second turn had been completed around the different decks, he was halted in front of the First-Lieutenant, who, with the greatest gravity, directed the cast-down criminal to "proceed forthwith to the fore-top-mast head, and to keep a good look-out that no boats boarded on the bow." It is needless to add, that, though an *old practice*, the "*new act*" was never repeated.

would present an awkward appearance were he directed to stand over the leadsmen in the channels, to see that his "song and his soundings" agree.

#### EXERCISE IN STEERING.

THE midshipman should avail himself of every opportunity to study the *secret* of steering. When unoccupied in his watch below, or when the young gentleman is at a loss to amuse his mind, let him repair upon deck, take the helm for an hour, or try a "trick at the weather wheel," to while away time. The stronger the breeze, whether steering by compass or conning by the wind, the sooner will he become practically acquainted with the power and properties of the helm. Should the ship be too much by the *head*, the helmsman is warned to expect a "taut weather helm." If, on the contrary, she swims too much by the stern, she will carry it a lee, or what is technically termed a slack helm.

WHEN STEERING BY THE WIND,—a tremulous motion in the clothes of the main-topsail (or, the main-sail, should the break of the poop obstruct the

view of the former) will always indicate that the ship is then at the desired point of "*full-and-by.*"\*

WHEN STEERING A COURSE, much of precision will depend upon the helmsman anticipating, or checking the ship in her inclination to yaw to star-board, or to port; nor must he trust too much to the compass-card. — The compass suffers much agitation from the motion of the vessel, and does not return sufficiently quick to its parallelism to point out the *true* position of the ship's head; whilst, on the other hand, the compass, in smooth water, requires to be touched to set it in motion. The principal requisites essential in steering are these:— a small helm, a quick eye, and ready hand to anticipate and "meet" the movement of the ship's head, and, above all, a nice acquaintance with the feel and force of the helm.†

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\* When sailing obliquely to the breeze, the dog-vane does not shew the true direction of the wind.

† "The feel of the helm," says Gower, an experienced seaman, "is a nice criterion to judge whether the vessel be coming-to or falling-off. As the vessel comes to against the helm, it will feel heavier, and the wind coming forward will appear stronger; on the contrary, as she goes off, and gives way to the power of the helm, it eases in the hand, and, by the wind's drawing aft, it appears to lessen."

## EXERCISE AT THE GREAT GUNS.

IN a chapter dedicated to a superior officer,\* the necessity of training young gentlemen at the guns is strongly urged. Every officer should make himself acquainted with the practical methods of mounting and dismounting artillery,—housing and securing guns for sea service,—training, pointing, elevating, and depressing every species of ordnance used afloat. He should also be conversant with the laws and actions of projectiles propelled by powder—the powerful effects of gravity, and resistance of the air on shot, and all the necessary knowledge requisite to constitute the naval artilleryist. Indeed, it is generally believed the day is not distant when *Naval Gunnery* will form part and parcel of the Midshipman's *examination* for Lieutenant. This *hint* may serve to put young gentlemen “on their metal.”

## EXERCISE IN EVOLUTIONS ALOFT.

YOUNG gentlemen sometimes mistake, or pretend to mistake, the intention of this exercise. However essential to the attainment of nautical knowledge,

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\* Vide *FIRST-LIEUTENANT*.

personal "practice" in evolutionary duties aloft is often, by the idle and ignorant, regarded in a penal light; whereas, if truth be told, the only individual upon whom the "pains and penalties" of *drill* are inflicted, is the officer who performs the *pleasurable* part of professional tutor.—Suggestions on this subject are reserved for the consideration of the Senior Lieutenant.

#### CELESTIAL OBSERVATIONS.

No acquirement is of greater importance to the professional student, nor capable of affording him more of mental amusement, than the practice of taking "angular distances" between celestial bodies. By a competent knowledge of this branch of nautical science, the sea-officer arrives at results which enable him to ascertain his situation at sea when the "dead reckoning" can be no longer depended on. This is of vital necessity, as is well known in the East-India service, wherein the study in question is sedulously pursued, and the utmost advantage reaped; but, strange to say, in His Majesty's Navy little attention is paid to it. Young officers should, however, be anxious to remove this well-merited



reproach. They are therefore enjoined to avail themselves of every opportunity, when “the sun and moon are in distance,” to take lunar observations,\* and work the results.—They are also recommended to habituate themselves to the method of obtaining the latitude by the “meridional altitude” of stars.

#### TO KEEP A MEMORANDUM BOOK.

YOUNG gentlemen are recommended to keep a memorandum book, and to note, from time to time, any striking circumstance or “practical hint” connected with professional pursuits.

Should any vessel in port, or at the same anchorage, be seen “preparing to shift” a lower-mast or bowsprit by her own means, midshipmen will do well to solicit permission of the Senior Lieutenant to witness the process of raising sheers,† and of applying the necessary purchase to lift the spar in or out of the step.

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\* It may be well to caution the observer, when taking his distances, to *note* whether his motion on the tangent screw is *progressive* or *retrograde*. The most perfect instruments have a material difference. It is not a bad rule — “Never make an observation on the *retrograde* motion.” — *Belcher on Nautical Surveying*.

† Vide “Raising Sheers.”

## IN PORT.

## KEEPING WATCH.

IT may not be amiss to impress upon the midshipman's mind the contrasted results brought about by the judicious or injudicious execution of this duty. By cheerfulness, assiduity, alacrity, and care, the long-sought path to promotion has been frequently found; whilst sullenness, supineness, neglect, and mistrust, lead rarely to any other road but that of degradation or ruin.

Whether the ship be fitting or fitted, moored in port, prepared for sea, or under sailing orders, considerable charge devolves upon the midshipmen composing the watch.

The quarter-deck is never to be left without a

midshipman, nor are gentlemen to resign their charge till each individual "*relief*" is in full possession of his trust. By this precaution the precise period of *mishap* can never be disputed.

#### AVOID UNNECESSARY NOISE.

IN the execution of the various duties incidental to the quarter-deck, such as conveying orders, calling side-boys, manning boats, &c., unnecessary noise should be ever avoided. Hoarse bawlings, and shrill screams, more frequently tend to impede than to promote despatch, and certainly indicate any thing rather than a ship in an orderly state. "Pipe the cutters away! Boatswain's mate!—*You*, boatswain's mate! *Where's* the boatswain's mate? Pass the word there below for the boatswain's mate." \*

Such loud bellowings, and privateer shouts, may manifest pulmonary power; but he who aspires to the appellation of an officer, or desires to procure a

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\* It is a singular fact, that ships of the line, where so much of facility is afforded to instil and pursue a system of silence, are invariably the most noisy in the execution of those duties alluded to in the text.

ready and prompt obedience, will save his lungs, and certainly pursue a more dignified and silent system.

In well-regulated ships, "side-boys" are ready at hand, and the day, or deck, boatswain's mate is kept within the beck of the mate or midshipman of the watch.

#### INDISCRIMINATE CALLS.

THE thoughtless and indiscriminate practice of calling many hands to perform duties of a trivial nature, has become too prevalent in the service to pass unnoticed. If only to sweep down a deck, or coil-up a solitary rope, the immediate cry is "After-guard and main-topmen, aft!" What is then the result?—twenty or thirty men, perhaps more, ascend the ladders, to be sent *down* again; and to be told that *two*, forsooth, are only required. Such inconsiderate calls only tend to produce dilatory movement, and unwillingness to work. "Men," says an officer of rank,\* "are so frequently called when not required, that when they really are, they

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\* Captain J. A. Griffiths, R.N.

doubt, do not come, and incur displeasure. Precisely the boy and the wolf in the fable.”

HINT.—To prevent noise, and produce something of system, two men from each department in the watch may daily, in turn, be made to perform the lighter duties of sweeping the decks, and the occasional coiling of the running ropes.

#### COPYING ORDERS.

WHENEVER the signal is made for a midshipman, the gentleman who proceeds to “answer it” should appear neatly attired in his proper uniform, side-arms, &c. He should carry with him the ship’s “order-book,” a good pen in his pocket, and use every exertion to return to his ship with due despatch.

Should the orders to be copied be likely to occupy considerable time, and be not altogether a matter of moment, the midshipman, previously to shoving off from the ship, should always ascertain from the commanding officer, whether the boat is to await his attendance. The boat’s services may be required for duties of a more urgent and pressing nature.

REEVING LANIARDS AND SETTING UP  
THE RIGGING.

Few people are prepared to assign the reason why, in reeving the laniard of the shroud, the mariner adopts one universal\* mode. The best seamen, if asked, are sometimes puzzled to reply. Some will attribute the cause to the lay of the rope; speak of the hawser-laid rope, and the cable-laid rope, and the *side* of the ship to which the shroud pertains. But, as Captain Griffiths shrewdly observes, what will such seamen "do, if they be ordered to reeve the laniard in the rigging-loft, and that the knots, or mark at the eye of the shroud, be off, so that they cannot tell which *side* it is for?" The fact is, the reason is referrible to the necessity of bringing the *strain*, in setting-up, on the *standing*-part of the shroud. The *knot* of the laniard should be *rove* in the hole of the dead-eye under the *end* of the shroud. If rove the other way, through the

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\* With the exception of the Dutch. Dutch seamen sometimes use dead-eyes with *four* holes; reeve the laniard with *two* standing-parts, and set it up on the bight.

hole in the dead-eye *under* the *standing* part of the shroud, the strain in setting-up will fall upon the *seizing*, and the dead-eye will remain on the wrong slew.

The subjoined sketch shews the manner of *reeving* the *laniard*.



### FURLING SAILS.

SHOULD he be stationed aloft, whether between the collar of a stay, or on the top of a cap, he will, whenever the hands are turned up to furl sails, exert every endeavour to be, if possible, the first individual to reach his post. He is not to stand stationary on the top, nor to remain perched like

a parrot on the cap, reiterating senseless sounds. Too much of unnecessary noise is heard aloft, without the midshipman swelling the clamour. To prevent, or prohibit noise, an officer must be in himself an example of *silence*. The top-midshipman is therefore required to preserve order, to prevent chattering when ascending the rigging, or lying out on the yards; to see that the earing-men haul close out, properly pass, and secure their respective earings;\* that the reef-band of

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\* The method of passing reef-earings is not to be picked up upon paper; nor is it so easy to define the meaning of "*over and under*," and "*inner and outer*" turns.

The reef-earings of the topsails are passed as follows:—

For the first, second, and third reefs, take the earing up from the sail, and pass it on the fore-side of the yard, round the cleat for the purpose, through the cringle, until two, three, or four outer turns (according to the reef) be passed; then reeve the bight through the cringle from *ast* forward, taking a round turn in the cringle, and passing the end from the cringle, *under* the yard, up aloft over and through the bight, then back over the yard on the fore-side, through the cringle from underneath the yard; slew the cringle well up; pass sufficient turns to secure; expend the end round the yard, ultimately taking a half-hitch round the topsail-lift close down.

The fourth, or close reef, is passed in a similar manner, with the exception of taking the *first* turns on the *after*, instead of fore-side of the yard, in order to cover the other reefs, and to keep the cringle close up to the yard. The *outer* turns to be passed for each reef are as follows—*two* for the first reef, *three* for the second and third, and *four* for the fourth. The use of the outer turns is



each succeeding reef be kept square along, and brought well on the top of the yard, before a single point be tied; that then the after-legs be hauled well taut; that when the leech be handing-in,\* and the canvass be gathering into fold and form for tossing-up, the midshipman descend from the cap to the fore part of the top, to superintend the skinning of the sail, and passing of the gaskets; and that immediately the booms be lowered, one watch be sent down on deck to assist in squaring the yards.

**HINT.**—In ships that preserve silence, the *mute* mode of letting go ropes is found to be most productive of despatch. Two or three *tell-tale shakes* of a rope from aloft will succeed sooner in having it disengaged on deck, than fifty hoarse and indistinct hails. Moreover, the officer stationed on the

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merely to keep the head of the sail on the stretch; whereas the *inner* turns have the whole strain of the leech to bear when the sail is hoisted and the bowline hauled.

\* The ends of the untied points are to be passed in towards the bunt. Hands in the top to attend the bunt-jigger. In most ships now, the preferable practice is adopted of hooking the bunt-jigger to a becket worked in the sail, instead of securing it to two points tied together. The becketts are generally placed between the first, second, and third reefs; the first for furling with one reef, the second for furling with two.

gangway, or bowsprit, can always see the precise period to "overhaul the reef-tackles," and let go the buntlines.

### SQUARING YARDS.

IN the execution of this service, where so much depends upon the ear and the eye, midshipmen manifest little of quickness, and less of method, in the process that should be pursued. In the first instance, the lower-yard must be trussed close to the mast, then squared by the braces, and subsequently by the lifts. Pending the operation of topping on the lifts, care must be taken that hands attend the braces of the lighter and loftier yards.

Previously to squaring the topsail-yards, they are to be hoisted six or eight inches off the cap.

### LOOSING SAILS.

IN loosing sails, an early ascent of the midshipman becomes indispensable, for to him will the commanding-officer look, that the boom and stay-sail tracing-line-men, bowline-benders, bunt, and

yard-arm loosers be all in their respective stations; nor must boom be raised, or movement made, till the word — “*Trice-up!* — *lie-out!*” be given. The loosers should be then nimble in casting-off their gaskets; but care must be taken that the sail be properly supported in their arms until the order “*Let fall!*” be heard. The points and earings of the several reefs, the topmen will rapidly disengage from the yard, and the earing-men will overhaul the reef-tackles before they lie in and return to the top. The midshipman in the fore-top must be on the alert to trace-up the stay-sails between the masts.

#### CROSSING TOP-GALLANT YARDS.

THE midshipman stationed in the tops should be particularly careful that there be no “*singing-out*” aloft, and that those unnecessary words “*sway away*” and “*high enough*” be never allowed to escape the lips of the topmen.\* The officers stationed at the yard-

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\* The *noise* now-a-days heard aloft in some of our ships, particularly those of the *line*, even surpasses the senseless shouts in which Spanish, Portuguese, and Neapolitan seamen delight to indulge. A certain remedy for this evil will be found under the heads of “*Preservation of Silence*” and “*Leave to the Ship’s Company*,” in the Chapter dedicated to the Senior Lieutenant.

ropes on deck, together with the boatswain and his mates appointed to look-out aloft, can always see the movements of the men rigging the upper and lower yard-arms. The hands in the top must keep their eyes on the lower lift, and take the slack of it down as the yard ascends. In nine cases out of ten, the lower-yard-arm becomes “unrigged” from inattention to this particular.

The midshipman of the top should get his “square marks” on the lifts down, as soon as the yard is across.

#### CHARGE OF BOATS.

WHEN employed on boat-service, whether in the performance of duty on shore, despatched from the ship, or alongside of another vessel, a *watchful* eye is required to be kept on his own ship. The midshipman in command of the boat will depute one of the crew to perform this necessary duty. By this precaution signals of “recall” will be instantly seen, and ships spared the shame of proclaiming, in broad bunting, their own insubordinate state.\*

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\* How frequently during a four hours' watch have ships been seen at Spithead with Dutch ensigns at the main, French at the fore, or Spanish at the mizen; and for what purpose? To recall a lazy mid in a paltry jolly-boat.

## CONDUCT TO BOATS' CREWS.

WHEN in charge of a boat, the midshipman is enjoined to preserve his station,—to avoid familiarity with the men, or overbearing demeanour, and, above all, the application of vulgar and abusive epithets.

If from praiseworthy motives of precaution, or from superior knowledge of the localities of a port, a suggestion be respectfully offered by the coxswain, the too prevalent reply of "*Wait till your opinion is asked,*" is not to be returned. Whether rejected or not, well-intended suggestions are not to be discouragingly nor haughtily treated. Pert replies provoke pert rejoinders, and insolent and contemptuous language invariably follows. Suggestions of inferiors may be treated in a manner to ensure good will, and at once to preserve and command personal respect.

## BOATS ALONGSIDE OTHER SHIPS.

BOATS' crews are not to be permitted to peep through the ports,—to indulge, when alongside of other vessels, in loose language, to draw comparisons, or to descant upon the "usage" or discipline of other ships.

Should mild remonstrance be vain, the midshipman in charge should direct the boat to shove off from the ship's side,—keep the crew at some distance on their oars, and immediately, on returning to his ship, report officially the names of the parties offending.

#### TRANSPORTING PROVISIONS AND WATER.

IN the execution of these and similar duties, the midshipman is never to resign his charge, nor, without absolute necessity, delegate to the coxswain of the boat superintendence of duty. The too customary practice of deserting the boat for the deck of a stranger, is sure to bring "trouble" on the head of the defaulter. Opportunities less subversive of discipline, or less detrimental to despatch, offer frequently enough to increase acquaintance or decrease the cockpit decanter. Nor are deck discussions, touching the relative merits in sailing, reefing, or furling, at all desirable on these occasions. Unless midshipmen remain in their boats, crews alongside become restive and riotous, and not infrequently fight for priority of place.

## WATERING THE SHIP FROM THE SHORE.\*

ON these occasions, the midshipman, or mate in charge of the boat, should, previously to shoving-off from the ship, see the following articles placed in the boat:—wooden and canvass buckets, hoses, bungs and bung-cloth, cooper's tools, triangle and tub, grapnels and ropes, stern-fast, and tackles to hoist in with, if unable to fill by the hose. "Casks in the boat should be ready slung. If it be required to roll the casks over rocks, shingle, or deep sand, much time will be saved by pieces of spars

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\* "In hot climates," observes Captain Griffiths, "seamen watering are so thoughtless, and feel such pleasure while in the water, that they are paddling in and out while watering sometimes all day. They come out of the water with their frocks and trousers wet; the immense power of the sun dries, or partially dries, their dress, and in they go again. Being salt water, the evaporation leaves the salt, stopping up all their pores, as we have all often felt. Thus there is injury from being long in the water, and from their clothes drying on them \* \* \* \* The men should never be allowed to go into the water when on this duty unnecessarily, nor kept, nor *permitted* to stay longer than is indispensable. Dry frocks and dry trousers for the boats' crews should always be sent. The party of necessity in the water should be *frequently* relieved, and these dry things put on, their wet ones soaked in *fresh* water, wrung, and dried. In such climates they will be ready for them to put on by the time their turn has again finished." A *tent* is often serviceable.

for 'ways' to roll on. If rocky, use short pieces; if otherwise, long ones. Always rinse out the casks, because, if they have been long empty, and particularly in hot climates, they turn mouldy and sour."\*

### BOATS UNDER SAIL.

CARE should be taken that the halliards be coiled up clear for running; that the sheets be *not belayed*; and that the crew, in shortening sail to a squall, do not shift their seats, or, as is too common a custom, stand *up* on the thaws to gather-in the shaking sail. In lowering a lug or latteen sail, haul down alone on the *luff* (the fore leach); the after one were better left untouched. Coxswains should be also cautioned of the danger of *letting go the helm*.† This is often inadvertently done,—sometimes to

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\* Griffiths's "Practical Hints."

† The author, when a youngster, was in this manner capsized, in one of the Barfleur's boats, on "Plymouth Bridge," before the Breakwater was even contemplated. It blew a heavy gale from the southward; the ships in the Sound had lower yards and top-masts struck. The boat was a six-oared cutter, carrying a mizen forward, set as a foresail, and a close-reefed foresail abaft, set as a mainsail. Under this sail, the cutter had behaved inimitably well, and had just succeeded in crossing the most dangerous part of the reef, when the coxswain, to get a *pull* of the main sheet, *let go the helm*, and the boat, flying up in the wind, and becoming



secure the heel of the bumpkin, or to get a pull of the main or the mizen-sheet. By this thoughtless practice, boats are liable to fly up in the wind, the sails to be taken aback, to be difficult to lower, and eventually to cant over, and "capsize" to windward.

#### SALUTE SUPERIOR OFFICER,

WHEN pulling, and passing a boat in which a superior officer may be seen seated, the midshipman should move his hat from his head, at the same time directing the boat's-crew to toss-up their oars in token of salute. If under sail, the boat's-crew are to be directed to lift their hats, taking the time from the gentleman in charge of the boat.

#### BOATS PULLING ON A LEE TIDE.

WHEN boats, on a *lee*-tide, are seen pulling in the wake of the ship, the circumstance is to be

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aback, capsized over to windward before there was time afforded to lower the sails.

The accident occurred at *sunset* in the middle of the month of November. The captain's steward was drowned, and considerable property, belonging to the present Admiral, Sir George Martin, was lost. The *Barfleur's* boat's-crew were upwards of fifty minutes in the water, in consequence of the delay and difficulty in receiving assistance from the ships in the Sound.

reported to the officer-of-the-watch, who will direct a buoy and towline to be veered to their aid astern.

The midshipman-of-the-watch will be required to have in readiness on the gangway "fresh boat-keepers," to relieve the wet and fatigued bowmen the moment the boat arrives alongside.

#### BOATS' - CREWS ABSENT AT MEALS.

SHOULD pressing duties or unforeseen occurrences occasion, during meal-times, the absence of any of the boats from the ship, the mate-of-the-watch should send to the cook and mate-of-the-lower-deck a list of such absent people, in order that their victuals may be kept warm and their grog be put apart from the mess allowance. And should boats be away from the ship after the time appointed for "piping down hammocks," those pertaining to the absent men are to be carefully taken below, and *hung* up in their proper berths. The inconsiderate cry of "*Send up Jackson's or Johnson's messmates to take down his hammock,*" should never be resorted to. The custom is manifestly bad, inasmuch as such privateer-like shouts always produce "more

noise\* than work." Moreover, upon such occasions "every body's business is *no* body's business." People should be especially appointed for this purpose.—Vide "*First Lieutenant*," under the head of "Stationing."

#### BOAT—GIVING A ROPE TO.

WHEN a boat from a lee-tide or running sea requires from the ship the aid of "a rope," care must be taken that the towline be passed as far *forward* as possible. The position of the fore-channels is too far aft, and causes too short a scope. The towline should be "passed from the cat-head, with a slip-rope to the crown of the spare or sheet anchor, which, when slacked, when the bowman secures the towline, the boat will ride with a good scope"† and with comparative ease.

CAUTION.—The towline should never be made fast to the ring in the bow of the boat. It should be passed through the ring, by way of "fair-leader,"

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\* When the punishment of "mast-heading" was preserved in the penal code, the author served in ships where these indiscriminate cries were invariably followed by a trip to the cross-trees.

† Captain Griffiths.

and eventually secured to the slings hooked to the bottom of the boat.

#### BOATS—WHERE BEST MOORED.

BOATS are best moored at the guess-swamp-boom. In this position, they ride under the eye of the officer-of-the-watch, and are less liable to damage than when secured alongside, or moored astern. Boat-keepers, unless especially called to assist in the execution of urgent or *heavy*\* service, should never be permitted to leave their boats.

#### BOATS—TO BE SEARCHED.

To prevent purloining the stores of the ship, an improper appropriation of the people's clothes, or a clandestine introduction of liquor on board, all boats proceeding from the ship to the shore, and *vice versa*, should be strictly searched.† The coxswain should

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\* Such as swaying up lower yards and topmasts. In a small vessel, with a "short-handed" complement, the practice may be tolerated.

† Whilst the master-at-arms or the ship's corporal are made to examine the persons of people ascending the side, the boats pertaining to the ship are seldom or ever searched. Were the truth told, many a tale of trouble might be traced to the captain's cloak bag.

be made to examine his boat, and report the result of his search to the officer-of-the-watch, before she be permitted to drop astern, or haul-off to the guess-swamp-boom.

#### BOATS—LOWERING DOWN.

IN lowering boats from the quarter or the stern, care must be taken that the moment the bottom touches the water, the *after*-tackle be quickly disengaged from the slings. If, in a tides-way, this precaution be not observed, the probability is, that the boat will immediately fill, the geer in the “drift” be eventually lost, and the men in the boat be exposed to imminent peril.

HINT.—The boat’s plug should be always attached to the bottom boards by a light laniard or small “nettle.”

#### BOATS—COXSWAIN’S REPORTS.

IT should be a standing rule, whether at sea or in port, that at sunset, or immediately after quarters, each coxswain report to the mate-of-the-watch, his boat *clear*, and ready for hoisting out, or lowering down.—In warm climates, the coverings of the

boat should be taken off, in order that the dew of the night should prevent the leakage consequent on the splitting of the planks.

## BOATS—SENDING ON DISTANT SERVICE.

MEMORANDA of articles required for distant service :—“ Spy-glass—quadrant—navigation book—compass—pencil and paper—chart—watch—lead and line—tinder-box—grapnel and rope—stern-fast—hammer—nails—spike for guns—spare rope, size of boat’s geer—spare tiller—spare oars—blue lights—lanthorns and candles—casks or kegs for water—ditto with *scuttle* for bread—arm chest—flints—turn-screw—tourniquets—great coats—muffling for oars—fishing lines—iron-pot—fuel; each man a knife—an axe—a maul—a crow—needles—twine. Colours of the nation on the coast employed.”\*

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\* Griffiths’s “ Practical Hints.”

A T S E A.  

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DIFFERENT stations will be severally assigned to the midshipmen composing the watch. To one will be given the charge of the poop; to another, that of the forecastle; and the remainder will be called upon to assist in the immediate duties of the quarter-deck.

## THE POOP MIDSHIPMAN.

THE cordage, canvass, and furniture pertaining to the mizen-mast and poop, will be under the immediate eye of this officer. He is required to superintend all duties incidental to that deck; and he becomes responsible for every occurrence that may there transpire during his interval of watch.

He should not permit unnecessary noise over the captain's head, nor aught of disorderly conduct on the part of the mizen-topmen and marines abaft. He should see that the quarter-boats contain no more than their proper proportion of geer and spars; that they be kept free from lumber; be properly secured, and be perfectly clear for lowering. He should also see that

THE LIFE-BUOY attached to the stern be in perfect readiness, and particularly that its *night-apparatus* be primed, and in proper order.\*

Unless especial permission be given to that effect, he will prohibit washed or wet clothes to be suspended from the shrouds, but particularly from the guys or geer of the quarter-boats.†

#### ORDER OF SAILING.

ATTACHED TO A FLEET.—Should the ship compose part of a fleet or squadron, formed in the order of sailing, the poop midshipman will be re-

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\* Vide GUNNER.

† The author witnessed the loss of an excellent and worthy seaman, in consequence of a marine's shirt having been stopped-on to one of the falls of the lee quarter-boat.



quired to keep a constant look-out on the next ship in succession astern; and, upon every occasion, report to the officer of the watch her relative change of position, and her "drawing up or dropping astern." All increase or diminution of sail should be also reported to the officer-of-the-watch. Attention to this duty becomes indispensable in the preservation of the ship's station in the line.

#### SAILING BY THE WIND.

THE poop-midshipman will see that the mizen-topmast and top-gallant sheets be close home; that the sails be taut-up; the bowlines hauled, and the weather-braces well in. He must never permit the weather-peak vang to be kept fast, nor the *lee-top-and-lift* of the driver to girt the sail.

CAUTION.—In squally weather the lee throat brail\* of the driver should be kept in perfect readiness, and its end pointed down on the quarter-deck. Previously to brailing-up, the lee cross-jack brace should be slacked, and the weather one

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\* In some ships the throat-brails are led forward to the main-bits on the quarter-deck.

rounded in, so as to prevent the driver coming in collision with the lee cross-jack-yard-arm, and thereby fouling or splitting the sail.

**WIND AFT, OR GOING LARGE.**—The cross-jack yard should be trussed to, previously slacking the braces, to permit the yard to close with the mast; the topmast breast-backstays to be set-up on both sides.

Should the wind be directly aft, the driver-boom sheet, guys, and both peak-vangs should be set steadily taut.

**TACKING WITH THE WATCH.\***—The poop midshipman becomes answerable that the lee-main, main-topsail and top-gallant braces be clearly coiled for running, and that the men appointed to attend these ropes be ready in their respective stations. On hauling the after-yards, he should “give an eye” to the breast-backstays, see that those on the lee side be “bore” abaft the top-rim, and that the weather ones be well set-up when the ship is on an even keel. He should wait till the after bowlines be hauled, before he set taut the weather-braces.

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\* Vide **OFFICER-OF-THE-WATCH.**

WEARING WITH THE WATCH.—In the performance of this evolution, much will depend on the skilful management of the main yard.\* The poop-midshipman should therefore place a practical and experienced hand to ease and attend to the *lee* main-brace.

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\* Vide OFFICER-OF-THE-WATCH, " Practical Hints."

## SIGNAL MIDSHIPMAN.

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### PRELIMINARY REMARK.

NOTHING will sooner procure for a vessel-of-war the popular reputation of "a smart ship," than a constant and vigilant look-out for signals. Indolence, or tardiness in the performance of this particular duty, promise little of alacrity in the execution of service more essential. But a signal midshipman should not be too anxious to retain this station ; because, if he continues, for a year or two, to give that exclusive attention to this office which is necessary to its due discharge, he must forego the acquirement of more important knowledge.

GENERAL DIRECTIONS.

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THE Signal Midshipman will be required to keep a constant and cautious look-out on the Flag or Senior Officer's ship; to answer with celerity signals when *discerned*; but on no account to answer any general or telegraphic combination until *every* symbol composing it be distinctly seen; nor, in his endeavours to distinguish signals from distant ships, is he to *imagine* colours, *anticipate* purports, or in any way to permit *thought* to occupy the place of *sight*.

Indications of evolutionary movements, however trivial they may seem in their nature, are to be reported in time, and the officer-of-the-watch made

acquainted with the precise period their execution commences.

The signal midshipman occasionally should visit, in his watch, the several signal halliards rove, fore-and-aft the ship,—see that they be clearly coiled, and kept in perfect readiness for use,—that in wet weather they be slacked, and, whenever they require renewal, they be properly stretched before rove; that the flags be “made-up” in one undeviating form—toggles clear, “taut in the skin,” and in as small a compass as possible; that the distant lines be all equalized according to the established length, and that the eye of each be fitted with a copper thimble.\*

The signal midshipman should never permit the idle and tardy practice of hoisting signals “hand-over hand,” nor allow the bight of the line to be taken *across* the deck. By leading one part of the halliards on each side of the ship, and having a detached “tack” coiled clearly within a small portable tub, and to bend on as occasion may require, any number of flags, by means of a small

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\* He should apply to the First-Lieutenant to give the necessary directions to the armourer.

snatch-block, may with celerity be run up to the mast-head, best suited to display the combination complete. \*

The signal midshipman, whether at sea or in port, will be required to keep a Signal Log, according to the following form:—

## FORM OF SIGNAL LOG.

<i>Signal Log of His Majesty's Ship</i> _____ .							
Date.	Time.		Made				
The month	A.M.	P.M.	By whom	To whom	General.	Tele-graphic.	Remarks.

\* "Signals should not be hoisted *close* up to the truck. The eddy wind from it, and more so from a vane of the mast-head, are very apt to prevent the upper-flag from blowing out."—*Practical Hints.*

I N P O R T.

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THE Signal Midshipman should never permit the movements of the Admiral to take him by surprise. A sharp and seamanlike eye will quickly detect preparatory signs. "Hands stealing aloft" to overhaul the top-gallant-rigging will indicate the senior officer's intention to fid top-gallant masts; "overhauling down lifts and braces," to cross top-gallant-yards, and "unclamping" the lower booms, will be a certain sign of the contemplated movements of either loosing or of mending sails.

True it is, that such preparatory signs originate usually with the foremast-men; but he whose sight and intellect are equally acute, will do well to remember the old saw of Seldon:—"the throwing



up of a straw in the air, will indicate the exact position of the wind."

The signal midshipman should also keep an occasional look-out on the flag-staff ashore ; nor are the movements of other ships to be disregarded. All vessels, mooring or unmooring, weighing or coming to an anchor, should be reported to the officer-of-the-watch.

Should the flags be in want of repair, he should report the circumstance to the senior lieutenant ; and whenever they become damp, or wet, or require exposure to the air, he should obtain permission to hoist them up.

A T S E A.  

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ATTACHED TO A FLEET.—The eye of this officer, or of that of the signalman, should be constantly placed upon the ship of the Admiral or Senior Officer; and he is enjoined to observe at sea (though, if possible, with more of vigilance) the same injunctions touching preparatory motions, which he has been already directed to observe “in port.” But he is particularly reminded to report to the officer-of-the-watch the most minute movement, or alteration of sail, made by the Commander-in-chief.

## SIGNAL BOARDS.

HE will be held responsible for the preservation of the several signal-boards, such as ship’s “distin-

guishing pendants" — "vanes" — "orders of battle, and of sailing;" and he will be careful to record on the signal-slate the time, the number, and character of every signal which may be made during his watch.

#### TELEGRAPHIC SIGNALS.

IN making telegraphic signals, the *signalman* should invariably note down the letters required to complete the words of each sentence. From similitude in the sound of such letters as P, T, V, M, N, mistakes constantly occur. Nor is the practice of "*delivering letters*" at a distance at all to be encouraged afloat. In plain parlance, the signal midshipman is cautioned against "*singing-out*" letters from one end of the ship to the other.

#### SIGNAL BALLS.

THE best kind of signal-ball is that made with two hoops to *shut* in a flat form. These balls should never be blacked with *tar* or "blacking," but be properly painted. They should be fitted with swivels, and kept in the mizen channels, stopped neatly up, and close to the ship's side.

### INDICATING DIRECTION OF STRANGE SAIL.

SHOULD a strange sail be descried from the mast-head, and it be desired to indicate her position by signal, care must be taken that the exact bearing by compass be given to the admiral.

### PREPARATIONS FOR NIGHT SIGNALS.

AT sunset the following preparations should be observed for making signals at night :—

The triangle to be traced-up to the mizen-peak; the lanthorns to be inspected; the lamps to be trimmed, and “candles matched;” two guns to be unshotted on each side of the main-deck;\* rockets and blue-lights to be inspected in the cabin, and the stand of the one, and holder of the other, to be placed in readiness on deck. The signal-midshipman should also remind the captain to look out for the night private signal.

MAKING NIGHT SIGNALS. — Whenever it be required to make night signals, the lighted lan-

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\* In some ships, two guns on each side on the main-deck have their breeching-rings painted white, to denote them as signal-guns. This is a good arrangement, and prevents mistake.

thorns should be kept covered in their tubs, until preparation be made to shew or hoist them simultaneously. Care should be taken that no other lights be seen from the ship, and that *spare* lanthorns be kept lighted to supply the place of those which may be extinguished by the wind, or the motion of the ship.

#### FOG AND SIGNAL GUNS.

WHEN signals are made through the medium of *sound*, it is of the utmost importance that the interval between each "report" be correctly noted. This is too often neglected.—Vide *Flag-Lieutenant*.

#### RECONNOITRING A PORT.

"THE sketch of the port may be taken off without difficulty, from the coasting pilot or charts, against a window. The position of the vessels laying therein must be laid down at the moment of reconnoitring."

If unacquainted with the place, "examine the chart, to see what will be the best bearing to obtain the fullest view, so as to have the shipping clear of headlands, islands, forts, or large buildings.

Compare the height of the masts of those whose hulls cannot be seen, or seen distinctly, with those that can, bearing in mind the state of the tide as to height: by this, any difference may be observed on a future reconnoitre, should any of the enemy's vessels be in a wet dock or basin.

“Observe if sails are bent; if light or deep; guns in, or not; (these may often be discovered by the sun throwing their shade on the paint;) whether few men on board; if clothes or hammocks are drying: \* whether riding by their own cables; (the bower anchors will shew this;) if launches are in or out.” †

CAUTION.—If reconnoitring when the wind is to the eastward, the signal-officer must make allowance for the state of the atmosphere; and bear in mind that, with an easterly haze, objects become deceptive to the eye, and frequently assume a variety of forms.

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\* From the clothes, and hammocks, the number of men on board may perhaps be inferred.

† Griffiths's “Practical Hints.”

## FORECASTLE MIDSHIPMAN.

## AT SEA.\*

THE physical faculties of this officer should unceasingly be held in readiness; the most acute of his senses—those of sight, scent, and hearing—will constantly be put to the proof. The “sharp look-out before,” the steady standing of the jib and boom, and, above all, the systematic readiness of running ropes, will fully testify the sharpness of the first; the “*condition of the head*” will give ample evidence of the sensitiveness of the second; whilst

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\* Nothing is here said respecting the duties of the Forecastle Midshipman in Port, inasmuch as the demands on his attention in harbour are few and trivial.

prompt compliance with commands from the quarter-deck will afford "proof positive" of the quickness of the third.

Like the gentleman abaft, the officer forward will be held responsible for every act and deed performed on the fore-castle. He will observe the same injunctions touching the unsightly system, the privateer practice, of hanging clothes promiscuously to dry in the rigging; and be cautious that none of the crew lounge, skulk, or sleep in the fore-channels; that neither ropes nor woollen clothing be suspended from the bows, and that no hides be towing alongside, in soak, without especial permission from the officer-of-the-watch.

#### LOOK-OUT MEN.

ON no occasion are look-out men (but particularly those planted at night) to be called from their posts to "let go" or "clap on" a rope.\* Such momentary absence may be the immediate cause of serious disaster; possibly, of destruction to both the ship and the crew.

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\* This reprehensible practice has become too prevalent on the peace establishment. The "*short-handed*" excuse will be found to be a poor apology for the *short-sighted* disaster.



## ORDER OF SAILING.

ATTACHED TO A FLEET.—When sailing in line, the forecastle midshipman is to keep a vigilant look-out on the ship next in succession *ahead*,\* and, upon every occasion, to report to the officer-of-the-watch the “drawing-up” or dropping of his own. If the ships ahead increase or shorten sail, he should also acquaint the officer in charge of the deck. His attention, however, is more particularly directed to the next in line *ahead*, or, to be more explicit, the immediate leader of his own ship.

## SAILING BY THE WIND.

HE should see that the fore-tack be close down, the sheet aft and properly shrouded, the head-bow-lines well hauled, the weather fore-lift and truss bowsed taut, the breast-backstays set up, the fore-topsail yard well in, and its weather lift properly taut.

If squally weather, he should see that the jib-guys are well-up, and that each bear an equal strain. He should keep a watchful eye on the head-sails,

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\* Vide OFFICER-OF-THE-WATCH.

report in time complaining spars, and have the jib-down-haul and weather fore-topsail clew-line laid clearly along, with their ends pointed down in the waist.\*

*Note*—When the top-gallant sails are to be taken in, he should not start the *weather* sheet until the yard be clewed closely down.

In hauling down the jib, a steady hand will be required to attend the sheet; and care should be taken that the sail be properly spilt before hands be sent out on the boom to stow or stop it.

In light winds and moderate weather, the jib must not, for a moment, be permitted to hang supinely beneath the boom; the sight carries with it an unseemly, slovenly appearance, and bespeaks something like laziness on the part of the people forward.

**WIND AFT, OR GOING LARGE.**—Should the wind be aft, or the ship going large, care must be

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\* When the jib is set, care must be taken that the stay be well-up, and that the sheet be neither too flat nor too flowing. When the jib is stowed, care should be taken that, in strong breezes, wet weather, and particularly if a *head-sea* be running, the *stay* be thoroughly slacked. Booms, before now, have been sprung solely from the circumstance of keeping fast the jib-stay when ships have been pitching in a head-sea.

taken that the breast-backstays on both sides be well up, that the fore yard be trussed closely to, and that each fore lift be set well taut. Should the ship roll, the rolling tackles\* hooked aloft are not to be forgotten below.

HINT.—The captain of the top is to report to the officer-of-the-forecastle, that the out-riggers, coiled-up geer, and implements of the top are securely placed.

#### SETTING STUDDING SAILS.

TOPMAST AND TOP-GALLANT.—The moment the preparatory words “Stand by to rig-out† topmast and top-gallant studding-sail booms!” be given, burtons are to be brought down from the topmast heads, hooked to the topsail yard-arms, and bowsed

\* The rolling-tackle should be a luff-tackle purchase, the single block hooked to a strap round the yard, the double one to an eye-bolt in the lower cap, the fall leading down on deck.

† In rigging-out the topmast studding-sail boom, a jigger with two tails is generally used; the outer tail-block is secured to the neck of the boom-iron, and the inner one to the heel of the boom; the fall is then rove through a leading block, and sent down on deck. When the boom is rigged out, the heel-lashing is passed to secure the boom. The jigger is a gun-tackle purchase.

To *rig-in*, the tails of the jigger are shifted; one is secured to the slings of the lower yard, and the other attached to the bolt in the heel of the boom. Before rigging-in, cast off the heel lashing.

well taut, pending preparations for rigging-out the booms. As soon as the booms are out and the studding-sails run sufficiently high to clear the brace-blocks, and to permit the yard-arm-man to cut the stops that encircle the sail, a rapid run together with the halliards and tack,\* and due attention to the inner leach, will ensure the studding-sail yard ascending abaft the topsail. When studding-sails are set on both sides, the *lee* one is to be set *before* the sail.

IMPROVED METHOD.—Strap a thimble to the studding-sail yard, about one fourth from the upper or outer extremity; fit a lizard on the halliards, reeve it through the thimble on the yard, †

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\* One or two ships in the war were wont to bring the topmast-studding-sail *tack* in *along* the lower yard, top-gallant-sheet fashion, and to fit the boom brace with a short pendant and a whip purchase. In trimming sails, the advantage of this method is manifest:—the yards may be braced forward without touching the *tacks*; the braces alone require to be eased.

If, in a strong breeze, the wind be too far forward to permit the lower studding-sail to stand, a martingale to support the topmast studding-sail boom may be converted out of the lower studding-sail halliards, thus:—Clap a temporary toggle on the lower halliards, lead the under end through one of the scupper-holes on the main-deck, secure it in board, and bouse well taut on the *hoisting* part.

† The lizard is fitted upon the same principle as that of the top-gallant-yard.

pass it three or four times round the halliards and yard, and hitch it to its own part with the bight just below where the halliards are bent.

The stops or "ties" being all off, sway the studding-sail above the brace-block, when the man on the yard will have only to pull on the end of the lizard, throw-off one or two round turns, and the studding-sail yard will fall in its proper horizontal position. The sail should then immediately be run-up to the yard arm, the man stationed on the yard guiding the inner leach in its ascent aloft.

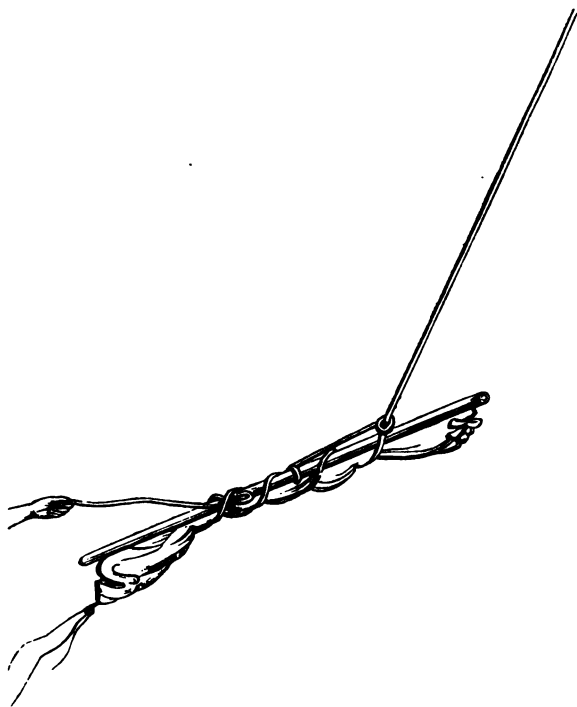
To dispense with the use of "stops" below and knives aloft, sinnet or nettle "ties" should be attached to the studding-sail yard.

The sketch on the opposite page represents the mode of fitting and passing the lizard.

#### LOWER STUDDING SAIL.

IN ships that dispense with the use of the sprit-sail yard, the operation of "getting-out," or rather of hauling forward the swinging boom, not infrequently becomes a tedious and troublesome task,

LIZARD, AS PASSED ROUND THE TOPMAST STUDDING-SAIL.





the result of the extreme acuteness of the angle which the fore-guy \* forms on the *first* hauling of it forward. To counteract this, and to obtain for the guy the requisite angle to rouse forward the boom, some ships purposely affix a jaw to a light and lengthy spar, which, protruding out of one of the main-deck ports, with a push or two from three or four of the stoutest gunners in the waist, produces instantly, while topping on the lift, the preliminary *start* which the guy so much requires.

When the boom is athwart, and trimmed with the fore-yard, the outer halliards and tack are to be well manned, taking in the slack of the inner halliards as the sail goes over the gunnel, and ultimately reaches its destined height. In running away with the lower-halliards, care must be taken that the yard be not brought-up with a *jerk* against the topmast-studding-sail

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\* The fore-guy is spliced round, or sometimes into an eye-bolt, to an iron hoop round the boom; the end is then taken forward, and rove through a single block strapped into a bolt in the bowsprit cap, and led in on the forecastle. Ships without spritsail yards sometimes attach a leading block to the outrigger at the cathead.



boom ; by this sudden jerk, booms are constantly sprung.

#### TACKING WITH THE WATCH.

IN assisting in the execution of this heavy but rapid evolution, the midshipman of the fore-castle will be, in a great measure, governed by the sail that is set. The moment that the brief order, “*'Bout ship!*” \* escapes the lips of the officer-of-the-watch, the men stationed to “stand by ropes” should immediately *run* to their appointed places. But attention is particularly directed to the indispensable necessity of seeing that the main-top-bowline and top-gallant-bowline men are instantaneously in their respective stations. By keeping fast, or fouling either of these running ropes, considerable damage may ensue; nor are the head-sheets, fore-tack, head-

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\* It were desirable that the customary interrogatories of “*Ready for'ard?*”—“*Ready abaft?*” were oftener disused in the service. A ship's company should be accustomed to “put the ship about” with as little notice as possible. This system will always tell on the sudden discovery of danger. The writer served as First-Lieutenant of two ships in which, upon the occasion of tacking, no preparatory time was allowed. When the officer on deck gave directions to “turn the hands up—about ship,” the helm was put down, and the people never failed to be up in time at their respective stations.

bowlines, backstay-falls, spritsail, and lee fore-top-gallant braces the less necessary to be attended to. The men stationed in the top are to overhaul the lee lower lift and trusses. The latter service should be performed without any auxiliary hail aloft from the forecastle.—Vide *Officer-of-the-Watch*.

#### WEARING WITH THE WATCH.

As wearing is a less rapid evolution than that of tacking, the keeping fast of “stand by” ropes is not so productive of mishap. The fore-tack, however, must be raised, and the head-bowlines “let go,” the moment the word be given by the officer abaft. The same directions touching lifts, trusses, backstay-falls, \* &c., are to be observed as in tacking.

#### REEFING WITH THE WATCH.

THE primary step in the execution of this too-frequently procrastinated service will be to clew the yard down close to the cap, to round in sufficient

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\* In some ships the “breast-backstays” are brought further aft, and, like the quarter-backstays, are set up “standing.” This plan is approved by some of the first seamen in the service.

of the weather-brace to permit the topmen to reach with facility the quarter of the yard from the weather-rigging, and to employ every exertion to spill the sail before "sending the people aloft." To effect this, and to save time, the officer forward will thus proceed:—

At the moment of lowering the topsail, request from abaft a check of the lee fore-brace; run away with the weather clue-line; clap plenty of hands on both bunt-lines, and, when the yard arrives on the cap, haul out the reef-tackles, (weather-one best.) By attention to these points, the officer will speedily spill the sail, secure the yard, and may safely order his men aloft. The earing-men to be cautioned to pass properly and secure the earings, and the remaining top-men to tie their respective points clear of the top-gallant sheets.

*Note*—It should be an invariable rule, that when the third reef be taken in the topsails, the preventer-braces be "clapt-on the yards."

#### REEFS—SHAKING OUT.

SETTLE sufficient of the topsail-halliards to counteract the effect of the lee-leach on the weather-

brace ; round in enough of the latter to clear the points of the lee-rigging. If with "treble-reef" topsails, check the lee fore-brace, set taut the reef-tackles, cast-off the points as the men lie out on the yards, and care must be taken that the earings, which are to be eased down *together*, be not disengaged until every point in the reef-band be detached from the yard. The keeping fast of a solitary point is more likely to split the sail than the entanglement of ten. In some instances it is desirable, in shaking out reefs, to set taut the bunt-lines.

#### STRIKING TOP-GALLANT YARDS.

TOPMEN to be sent aloft, to unreeve the top-gallant studding-sail, and unbend the top-gallant geer; to untoggle\* the top-gallant halliards; stop the yard-rope out to leeward, and attach to the

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\* The top-gallant halliards are thus "toggled:"—Take within a few feet of the cross-trees a round turn of the yard-rope round the strap of the upper block, fitted for the purpose; pass the bight of the former through the eye of the strap of the latter; toggle the bight of the yard-rope; then pass its end through the lower block, lashed to the head of the lower rigging; lead it up again through the upper block, toggled on the tie-part of the yard-rope; then down on deck; and, finally, through a leading block on the fore-castle, or a sheave in the bits.

lower yard-arm a tripping-line, which should be led through a tail-block, secured to the weather cathead.

CAUTION.—Should the ship be rolling heavily, or pitching in a head sea, care is to be taken that a turn or two of the parrel-lashing be kept fast till perfectly ready for tripping the yard.

#### STRIKING TOP-GALLANT MASTS.

FROM impropriety in practice, the operation of striking top-gallant masts not infrequently becomes a troublesome task.

The system so often pursued of hauling, or rather "*swigging down*," on the weather backstay, is subversive of the purpose desired. By this unmeaning practice the mast becomes bound in the tressle-trees and cap, and consequently difficult to lower.

To produce the desired effect, proceed thus :—Overhaul, first, the flying-jib halliards, lee-rigging, and top-gallant yard-rope ;—if blowing hard, and the ship be leaning over to leeward, care must be taken that the laniards of the weather-shrouds

be not *overhauled*,\* and that the weather-backstays and top-gallant and royal stays be eased handsomely by hand;—sway then on the mast-rope; as soon as the fid is out, man immediately the top-gallant yard-rope and flying-jib halliards, and place hands to gather-in a steady strain on the weather backstays and top-gallant and royal stays; then lower away, hauling best down on the yard-rope and flying-jib halliards; the latter ropes will act as perpendicular purchases, and produce the desired descent; the heel of the mast should be secured, and the rigging hauled taut down in the top.

*Note*—Topmen aloft should never be permitted to sing out aloud, “*high enough!*” or “*lower away!*” A wave from the hand aloft, directed to the boat-swain or mate looking out for the mast below, will answer every possible purpose, and produce that silence† so essential in the execution of every service.

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\* Unless the shrouds be rendered unusually taut by rain, there need be little or no necessity to slack the *weather rigging* with “*wedge-fids*.”

† No people deride unnecessary noise more than British men-of-war’s-men; witness their jokes when in company with Portuguese or Neapolitan vessels.

## MATE - OF - THE - WATCH.

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### IN PORT.

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FOR the efficient discharge of all subordinate duties the mate-of-the-watch will be held responsible. During the night, he will see that a midshipman in turn visits periodically the several centinels at their respective posts; direct a vigilant look-out to be kept around, and a watchful eye on such boats of the ship which, from circumstances, may unavoidably be moored astern, or secured alongside. The latter caution refers to port practice, when a crew is "hulked," or the ship deprived the means of hoisting up, or hoisting in, her boats.

He will also see that a midshipman “ goes the general rounds ;” visits, every hour, the orlop and different decks, and that the young gentleman returns his report to the officer-of-the-watch. Unless previous permission be obtained from the quarter-deck, lights are not, after gun-fire, to be allowed below; nor are stragglers to be seen out of their hammocks, lying or lounging on the decks.

HINT.—Defaulters may be admonished, and quietly ordered to their beds, with something of tact and temper on the part of the admonitor.

In conjunction with the quarter-master, he should attend to the hawse, and to the turn of the tide; while, to ensure the ship’s swinging the “ right way,” he should give timely notice to the officer-of-the-watch.\*

#### FRESHENING HAWSE.

WHEN, from bad or boisterous weather, the hawse requires to be freshened, the circumstance is to be made known to the master, in order that he may superintend, in person, the careful execution of this service.

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\* Vide OFFICER-OF-THE-WATCH in Port.



## SHEET-ANCHOR WATCH.

ON these occasions the mate-of-the-watch should report to the officer in charge of the deck, the deep-sea lead over the side; that axes, bars, and other implements for disengaging the anchor are ready at hand, and that the men stationed to stand by them are at their respective posts.

A T S E A.  

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HE will assist the officer-of-the-watch in the performance of all *executive* duty, repairing to whatever part of the ship his services are most needed. By night he will superintend the duties of the waist;\* that is, when ropes are led, or worked on that deck.

## MUSTERING THE WATCH.

IN some ships this *muster* is turned to *double* account; the system is extremely simple, and is

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\* The practice of leading and working ropes in the waist is now seldom resorted to. In wet weather, with a well-sanded deck, a jib down-haul, or topsail clue-line, may be worked in the waist with considerable advantage.

strongly recommended as working well. The principle is that of calling *stations*, instead of answering to numbers or names.

In his night "Order-book," addressed to the mate-of-the-watch, the first-lieutenant assigns to each watch a specific evolution. For example:—

" Jan. 1, 1835—H.M.S. *Matchless*, at sea.

" STATIONS TO BE ANSWERED DURING THE NIGHT.

" Samuel Smart, First-Lieut.

" First watch, answer to *Furling sails*.

" Middle watch - - - *Shifting topmasts*.

" Morning watch - - - *Reefing topsails in stays*."

When the people are assembled aft to muster, the mate-of-the-watch announces the given evolution.

At muster in the *first* watch, he says, " Answer to *furling sails*." He then commences, " Francis Fish." Francis Fish is captain of the fore-castle of the starboard watch, and answers, " *Bunt, fore-yard*."

At muster in the middle watch, the mate cries, " Answer to *shifting topmasts*" — " Henry Hawse." Henry Hawse is captain of the fore-castle of the larboard watch, and answers, " *Reeving fore-top-tackle fall*."

At muster in the morning watch, the station is "*Reefing topsails in stays*"—"Francis Fish." Francis Fish answers, "*Weather reef-tackle, fore-tack, and bowline ;*" and so will every man in succession call his station according to the evolution given.

#### MARKING THE LOG-BOARD.

IT would be difficult to name any official record or public document which is more constantly called for, or more frequently appealed to in disputed points, than the log-book\* of a vessel-of-war. Yet, singular as the assertion may seem, (though, indeed, anomalies have long appeared to flourish afloat,) no public register is so faulty in its notation of time, so careless of construction, or so truly unimportant in "remark," as those which are cautiously treasured in the archives of Somerset-House.†

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\* The log-book is a literal copy of the "Board." "In the event of courts-martial taking place, and a variety of other cases, of what importance this record becomes!"

† It will scarcely be credited, that, during one of the most turbulent and alarming periods which have been recorded in the pages of English history, not a *single syllable*, in allusion to the state of anarchy afloat, is to be found in any of the log-books of those vessels-of-war whose crews were at war with the government of their country. This is not mere assertion. To establish this truth, the author of these pages has spent many a dull and dreary hour in the "cobwebbed cellars" of Somerset-House.

“ Would it be too much to say,” observes the author of ‘ Practical Hints,’ “ that, influenced by unavoidable circumstances, there perhaps exists scarcely a single *correct* log-book, recording any transaction of moment.

“ Whatever will tend to improve it, and to obviate its accustomed errors, must be desirable. For this purpose, let the log, whether in sight of land or not, be regularly hove ; the bearings of the land to be set at least twice in the watch ;\* *every* alteration of sail to be noted ; and, to enable it to be ascertained what sail the ship was under at any given time, insert at noon and at eight P.M. what sail the ship had then set. The barometer and thermometer may be added at the same hours.

“ The state of the weather and atmosphere are of equal moment ; and yet whenever these are not of a positive marked description, examine the logs

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\* Captain Griffiths recommends every *hour*, but twice in the watch is generally considered sufficient ; moreover, if in a fleet, the bearings of the Admiral, and (when in the *weather* column) the leader of the lee line are required to be recorded once or twice in a watch. Were the names of some headlands that could be mentioned on the coasts of Spain, Ireland, and Scotland, to be twenty-four times written on the board, there would be little room left for the insertion of important “ remarks.”

of half-a-dozen ships in company, and they will probably all differ. It will be difficult—perhaps impracticable—to lay down any absolute rule as to the state of the wind. The following is merely offered for consideration, with the hope it may tend to promote a nearer approach to a general understanding upon the subject. To designate the force of the wind, under this arrangement, it is to be considered that the estimate supposes the ship to be close-hauled.

**LIGHT AIRS**, are unsteady flaws of wind.

**LIGHT BREEZES**, when these have become steady.

**MODERATE BREEZES**, when all the flying-kites may be pleasantly carried.

**FINE BREEZES**, when they may still be carried, but requiring a look-out.

**FRESH BREEZES**, as *much* as can carry single-reefed topsails and top-gallant sails.

**STRONG BREEZES**, double-reefed topsails, jib, and spanker.

**MODERATE GALES**, treble-reefed topsails.

**FRESH GALES**, close-reefed topsails.

**STRONG GALES**, under close-reefed main-top-sail.

**HARD GALES**, under storm staysails.

“ In the absence of any general classification of weather, this may be useful. In adopting it, some judgment must be used, because the state of the *sea*, as well as of the *wind*, must influence the sail that can be set. The effect of wind and weather will be differently viewed between a sloop-of-war and a line-of-battle ship.”

#### HEAVING THE LOG.

To detail the dangers and disasters to which a ship may be liable from carelessness in the important operation of heaving the log, would require a distinct chapter. It is true that the “dead reckoning” is seldom unchecked by other data, and that people who perform long voyages, and who trust to astronomical observations, pay but little regard to the “run” given by log. The naval astronomer, with his chronometer, sextant, and “Nautical Almanack,” and with the sun, moon, and stars unobscured, feels for a time independent of the log; but of what avail is astronomical knowledge, if, towards the termination of a passage, when pushing for a port, the heavenly bodies become invisible to human eye? This is a circumstance by no means unusual,

in temperate climates, for days and nights together, particularly on approaching the *land*. At periods like these, even the astronomical navigator must lay aside the watch and sextant, for the ruder instruments of the lead and log. Let him, therefore, not affect to despise the log; and, moreover, to bear in mind, that an incorrect return of the ship's periodical "run," may be the sole and immediate cause of her total loss.

The mode pursued by ignorant and indolent people in heaving the log is thus:—

The "strike of the bell" catching the ear of the moping mate, he rouses himself, and repairs abaft to heave the log. To assume an air of official smartness, as also with a view to impress his superior, in charge of the deck, with a favourable opinion of his punctual observance of duty, he cries in a loud and authoritative tone, "Quarter-master, hold the glass!—mizentop-men, the reel!" The glass and the reel are already in hand; the holder of time awaiting some minutes the word, which is to set the seconds in motion. As soon as the mate is securely seated, and has coiled ready in hand the necessary quantity of stray-line, to clear the



dead-water in the wake of the ship, he and the quarter-master interchange the *same* words, in asking and answering the same question.

“ Clear glass ?” asks the one ;

“ Clear glass !” answers the other.

Overboard goes the log-ship. “ Turn,” cries the mate, as the “ stray-mark” passes through his outer hand ; “ Turn,” responds the quarter-master, suiting the action to the word, and inverting the glass by a timely turn of the wrist. “ Stop !” calls the timist ;—“ Stop,” echoes the mate, suddenly arresting, in its run, the line which he had been so lavishly “ paying astern.” The nearest knot within or without the quarter is then examined. Six is the nearest at hand ; and, though far wide of the ship’s actual rate of going, yet six he imagines to be nearest the mark, and reports the same to the officer-of-the-watch.

“ Six !—no *more* ?” exclaims the Lieutenant. “ Why, the last hour she was going *eight* and two.” “ Six to a *fathom*, sir,” rejoins the mate, in a tone of confidence at once calculated to dispel his superior’s doubt. “ Possibly the wind is less than it was,” returns the officer-of-the-watch, who, in all pro-



bability, is busily occupied building castles in the air, and not then in the vein to question further the ship's *reported* rate of going. "Give her six," he says; and down "dives" this matchless mate to insert in the ship's official record her *erroneous* run. Now if the cause of the ship's diminution of speed be investigated, it will probably be found that, at the very moment the careless mate was paying the line astern, the ship was *shaking* in the *wind*, and had consequently lost much of her previous way.

Were gentlemen, instead of confining their interrogatories to the quarter-master holding the glass, to consider the necessity of putting questions of equal importance to the quarter-master standing *at the conn*, errors would not so often occur. As soon as one quarter-master has affirmed that his "glass is clear," the other, when sailing by the wind, should be thus interrogated:—"Quarter-master, *is the ship full-and-by?*" If going large, or steering by compass, "*Is the ship her course?*"—How seldom are these precautions taken!

#### MAST-HEAD, AND LOOK-OUT MEN.

THE mate-of-the-watch should order the mast-head-men aloft with the dawn of day. When relieved,

and they descend on deck, they will report to the officer-of-the-watch whatever is in sight around.

This officer will be also required to visit periodically the night look-out men ; see that they are all at their respective posts ; that they are not napping ; nor diverted from their duty by listening to tales in the waist, nor to stories told on the forecastle. \*

#### CALLING AT NIGHT-LIEUTENANT'S RELIEF.

UNLESS employed in the execution of more pressing duty, the mate should invariably call and awake the officer of the succeeding watch. In discharging this service, young gentlemen are delicate, erroneously supposing that the act of shaking a superior's person may be deemed an impertinent liberty. Moreover, youths, when half sea-sick, and unsteady on their legs, are not to be entrusted with *lights*. They may leave them in positions to endanger the safety of the ship.

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\* The author served in a seventy-four which nearly lost her bowsprit in consequence of the lee-cat-head man leaving his look-out to listen to a tale of laughter in the waist.

## MAIN-DECK MATE.

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### GENERAL DIRECTIONS.

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It is expected of this officer to superintend all duties which are to be executed upon this deck during the day, that is, from day-break until gun-fire, or, as it is sometimes termed, the "setting of the watch."

### DISCIPLINE OF THE DECK.

THE mate-of-the-main-deck will be held responsible for the cleanly condition, and general order and discipline of the deck. He should take every pre-

caution to prevent wrangling in the galley ; nor should he permit noise to be made in the waist, nor, at any time, allow the boys of the ship, or officers' servants, to "sing out" upon the deck, or bellow down the hatchways below. Neither should he suffer the ship's company to wash their clothes between the guns, or to scrub any part of their apparel, except on those days appointed for the purpose.

**CLEARANCE OF THE GUNS.**—Attention is directed to the clearness of the guns ; that the "ridge-ropes," fore-and-aft, be set up taut ; and that neither the tools of artificers, nor "unfitted furniture," be placed within the proscribed line.

**HALF-PORTS AND GRATINGS.**—When the gratings and half-ports are unshipped, this officer should be careful that the carpenters cautiously secure them in their appointed places. The half-ports are frequently found defective, from inattention in fixing them firmly in their cleats.

#### CABLE GEER.

**WHEN** the cables are worked upon the main deck, he will be held responsible, by the master, that all

the nippers, stoppers, cable-ropes, hooks, &c., be kept in order, and in perfect readiness for use.

**WASH-DECK BUCKETS.**—The wash-deck buckets are placed under the care of this officer. They should be mustered every evening,\* and to each department in the ship should be allotted a proportionate number. The buckets should be labelled and numbered — Forecastle, No. 1; Quarter-Deck, No. 2; Main-Deck, No. 3; and so on. The mate-of-the-main-deck should see that the cooper keep the buckets in proper repair.

**SANDED BOXES, OR SPITTOONS,** should be placed daily in the galley; and the cook cautioned to keep the vicinity of the coppers in a clean and wholesome condition.

### SHIP'S COMPANY'S VICTUALS.

THIS officer is required to overlook the duties assigned to the cook. He should see that the salt-meat be properly steeped, and that the victuals of the crew be cleanly and palatably dressed. He should also, in conjunction with the assistant sur-

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\* When decks are washed, on the following morning. Generally speaking, there is too much washing afloat.

geon, inspect the coppers, see that they are kept in a clean and wholesome state, and that the skimmings of the boilers, in which salt meat has been boiled, be on no account given to the men, either to mix with their puddings, or to use in any other manner with their meals.—Nothing is more unhealthy, or more likely to produce scurvy.

**BEEF — CUTTING UP.** — The mate-of-the-main-deck should always be present at the “cutting up of the beef.” Nor are “*choice pieces*” recommended to be taken from the “block.” The service sanctions the custom; but the custom, for obvious reasons, were better abolished.

**MIXING AND SERVING GROG.**—The mate-of-the-main-deck should invariably attend to the mixing and serving of the grog, and see that the people’s allowance be fully and fairly served. He should prohibit the practice (technically termed) of “bullying the cask;”—and, when a spirit cask is empty, see that it be thoroughly rinsed with salt-water, before it is struck below.

## FIRST COMMISSIONING.

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### CLUES, LANIARDS, AND LASHINGS.

ONE set of clues, laniards, and lashings, for the use of the ship's company's hammocks, should be well blacked,\* and traced up to dry between the tracing-posts, on the deck of the hulk. The superintendence of this duty is assigned to the mate-of-the-main-deck.

### NIPPERS, STOPPERS—BIT AND RING.

THE bit and ring-stoppers, together with the necessary number of nippers, should be fitted as

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\* This service cannot be taken too early in hand. Cold tar and salt water boiled together, and laid on hot, makes an admirable blacking.



early as possible. As the master becomes responsible for every thing pertaining to the cables, the mate-of-the-main-deck will consult with that officer as to the manner in which he may desire the stoppers to be fitted.\*

#### FITTING MESSENGERS—POINTING HAWSERS.

BOTH messengers—the *spare* one, as well as that intended for immediate use—should be fitted as soon as supplied. The splices of the eyes should be pointed over, and a toggle, or *lashing*, attached to each messenger. The mate-of-the-main-deck will also be required to see that becketts be worked in the extremities of all towlines and hawsers allowed to the ship, and that the

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\* The *Bit-stopper* consists of four or five fathoms of rope, tailed out nipper-fashion at one end, and clench-knotted at the other. The stopper is rove through a hole in the knee of the bits, and brought close home to the knot. It nips the cable on the bight.

The *Ring-stopper* is made with a long piece of rope, unlaid at each end towards the centre, and fitted nipper-fashion, having enough *laid* up to clove-hitch into the ring-bolt; one end is placed on each side of the cable, one worked into the lay, and the other passed across over the first. These stoppers, in length, will depend upon the size of the cable. From three to four will be sufficient for any ship.

ends of all be properly pointed. The above cordage, as well as the stream-cable, should be stretched at the capstan before it is allowed to be coiled in the tiers.\*

#### RIDGE-ROPES FOR GUNS AND WAIST HAMMOCKS.

THIS officer should also see fitted, blacked, and traced-up to dry, the ridge-ropes for the waist-hammocks and main-deck guns. These duties are too often given to the gunner.

#### FIRE-BUCKETS.

THE fitting of these buckets is assigned to the two-day-mates.—Vide *Gunner*.

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\* This practice is seldom observed in the service, notwithstanding its obvious utility. All new cable-laid-ropes, hawsers, and towlines, as well as cables that require to run clear of kinks, should be either coiled against the sun till well stretched, or with the sun, and the end taken through the coil.—Vide *Master*—"Coiling Cables."

IN PORT.  

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## WORKING THE CABLES.

WHEN the cables are worked upon the main-deck, this officer becomes accountable to the master that all the nippers, stoppers, cable-ropes, hooks, and requisite instruments for working the chain-geer, be kept in order, and in perfect readiness for use.

WORKING THE CABLES.—Upon every occasion when it may become necessary to veer cable, freshen hawse, or heave-in, the mate-of-the-main-deck will be required to attend in his station in the waist.

Chain-cables should be ranged in French fakes.

**CLEARING DECKS BEFORE DARK.**

THE practice of permitting this deck to be encumbered, in port, by planks, casks, cord-wood, sea store-ropes, unbent sails, or unrove rigging, is not infrequently fraught with evil. Unless peculiar circumstances preclude the possibility of their stowage elsewhere, stores, and furniture of this nature, should never encumber the deck upon which the cables immediately work.

The mate-of-the-main-deck will be therefore required to report to the Commanding Officer, before night-fall, that the deck is as clear as circumstances will admit, and that ample room is left for the working of the capstan as well as of the cables. Neglect of this may lead even to fatal consequences.

**HOISTING IN AND OUT BOATS.**

WHEN heavy boats are to be "hoisted in" or "hoisted out," whatever be the "falls" or purchases worked in the waist, the main-deck mate should take especial precaution that the "leading blocks" be so placed as to permit the people, in

their progress aft, or forward, to "clap on" the falls led in opposite directions. By this system, considerable time will be saved, and the necessity spared of calling hands from forward aft, or from aft forward, to "re-man" the stay, or yard-tackle falls.

#### MOORING AND UNMOORING.\*

THE main-deck-mate will see that the foretopmen and gunners stationed to pass, shift, lash, and unlash, or toggle and untoggle † the messenger, perform their respective tasks with a silent and becoming speed; that when "heaving in," the boys and idlers light the messenger quietly and quickly around; that no *jambing* turns be taken with the nippers, and that the consequent cry of "avast heaving!" be discouraged, and the practice be resorted to as seldom as possible. If nippers be properly passed, and disengaged in time, there need be no necessity, particularly when working the chain-cable, to stop the rotatory motion of the cap-

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\* These directions are applicable to the main-deck mate of a frigate; in a line-of-battle-ship, to the lower-deck mate.

† Some ships bring the two eyes of the messenger together by means of a rope-toggle.

stern. When the anchor is hove up high enough for hooking the cat, and when the latter is hooked, and its fall hauled well taut, the mate-of-the-main-deck, previously to "surging the messenger," should be prepared to clap on a "cable-rope," for the purpose of running-out sufficient of cable to take the anchor to the cathead. A permanent *mark* for "catting" will save much of the customary noise incidental to the cry and pipe of "*cable enough!*" As soon as the mark for catting arrives in the hawse-hole, the cable must instantly be stoppered *over-all*.

Gower's simple and seamanlike method of clapping on a nipper that cannot jamb, is here subjoined.



"The nipper, thus applied, is taken once round the cable, and once round the messenger, the *foremost* end being wormed round the cable, and the *after* end round the messenger, and a hand is

employed to hold on each end of the nipper." By referring to the sketch it will be clearly seen, "that as each end of the nipper is drawn contrary ways by the cable and messenger, its turns can never come together, so as to jamb each other; at the same time *both* ends remain clear for taking off; while its binding effect, to hold the cable, remains indisputable."

#### WEIGHING WITH A HEAD SEA.

WHEN weighing in a head sea, this officer is cautioned to have ready overhauled at hand a good deck-tackle. He should also take the precaution to pass the bit-stopper, and to trace up its bight, after the manner recommended in the chapter addressed to the Master.\*

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\* Vide "Practical Hints."

A T S E A.  

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THIS officer will be required to superintend *all* duties performed during the day in the waist. He is to observe the same instructions relative to clearing decks before dark, whether at sea or in port. The mate-of-the-main-deck should always be on the alert in squally weather, and be careful that the topsail-sheets be coiled clear for running, and that a gunner of the watch, or steady seaman be stationed to "stand by" the main-sheet, if worked in the waist. Attention is also directed to the lower-studding-sail tacks, and geer pertaining to the swinging-booms; and that all ropes under the care of the captain-of-the-mast be properly pointed.



## LOWER-DECK MATE.

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### PRELIMINARY REMARKS.

THE duties of this officer are of more importance than might, at first sight, be imagined. The authority vested in him should be exercised with discretion and firmness, but not vexatiously. In his hands, strict discipline should be tempered with kindness. Instead of captiously finding fault with the men on frivolous pretences, he should manifest a regard for their personal comfort, and ensure their ready obedience more by forbearance than by calling for coercion. Should the latter, however, be absolutely necessary, of course he will not be slow in appealing to the Commanding-

Officer. But let him not be ingenious in discovering and magnifying causes for complaint. It is his particular province to be in constant intercourse with the men on the lower-deck; and were he even to study a little their respective dispositions, he may be enabled to discharge his duty with better effect,—to administer, as far as in him lies, to the general happiness of the ship's company, and therefore to promote a more firm and efficient discipline. It is hardly necessary to add, that perpetual objurgation, and foul and abusive language, render the obedience of inferiors unwilling, and almost ineffectual, because degradingly extorted; and it follows, as a necessary consequence, that when this is the case, *nothing goes right*.

## GENERAL DIRECTIONS.

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### MESSES OF THE MEN.

IN all matters connected with the change or choice of mess-mates, it is recommended to the mate-of-the-lower-deck to afford to applicants every possible accommodation, consistent with the custom of the service.\* Although a man may not be disposed to divulge his motive, yet he may have reasonable cause for desiring to leave his mess ; therefore it is, that considerations of mere “pen-

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\* It is customary to allow the people to change their messes monthly, giving timely intimation to the mate-of-the-lower-deck. Messes are formed of even numbers. Benefits are said to arise from permitting all the first class petty-officers to mess together. The author never served in a ship in which such a system was pursued, but there appears no objection to its general adoption.

and-ink" trouble to the purser's steward are not to be put in competition with the personal comfort, or mental happiness, which the change may afford to the seaman or marine.

The mate-of-the-lower-deck will be required to keep a mess-book\* for the guidance of the first lieutenant.

#### HANDS TURNED-UP.

WHENEVER the hands are turned-up to execute any specific service, he will hasten the movements of the men, stimulate exertion, and report to the Commanding Officer when "all are up from below."

#### PIPING-UP, AND DOWN, HAMMOCKS.

IN piping up, he should never permit the men to let their hammocks touch the deck ; nor, in " piping down," should he tolerate the injurious practice of heaving them heedlessly down the hatchways. When the hammocks are all hung up, the-mate-of-the-lower-deck should make his report to the senior lieutenant. In cases of dispute between men touching encroachments of hammock-berths, he

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\* In estimating individual character and conduct, this book will be found of the first utility.

should not impatiently dismiss the parties without redress, but personally investigate the matter, and do his best to satisfy complainants.

#### PREPARATIONS FOR DINNER.

PREVIOUSLY to piping to dinner, he should inspect the mess-kids of the men, see that they be all in a proper and cleanly state, and ranged in order fore-and-aft upon the tables of their respective berths. At seven *bells*, he should direct the lower-deck to be swept, and see that three tubs,\* for the purpose of collecting potato-peelings and bones, be placed at equal distances on the deck; that those seamen and marines destined to “relieve their men” at noon—such as boat-keepers, helmsman, leadsman, look-out-men, and the several sentries planted on post—have their dinners served-out, and that they be not disturbed at their meal.

#### AIRING AND VENTILATING THE LOWER-DECK.

HE should use every endeavour to prevent humidity below; and report to the senior lieutenant, upon

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\* In small ships one tub will suffice. The mess-cooks of the preceding day should be appointed to place and empty the tubs before and after dinner.

all occasions, when lighting of stoves becomes requisite. He should also direct his attention to the wind-sails, and employ every possible means to promote a free circulation of air fore-and-aft.

#### DRY HOLY-STONING THE ORLOP.

SHOULD it be the custom of the ship to holy-stone the orlop-deck, it is recommended to this officer to direct the wing-gratings to be unshipped, and stoned in the nearest cockpit. By this precaution much of dust and dirt will be prevented lodging on the tanks, or accumulating in the hold underneath.

#### WET CLOTHING BELOW.

HE should never permit wet clothing to remain below. If the weather be fine, he should report the circumstance to the first-lieutenant, in order that damp garments may be piped-up and dried upon lines rove for the purpose. If the weather be wet, the clothing of the people should be put in tubs, and kept under the charge of the sentinel at the door of the ward-room or the cabin.

## FIRST COMMISSIONING.

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### BERTHING HAMMOCKS.

ONE of the first duties which will devolve upon this officer, will be that of berthing the ship's company's hammocks.\* To attain that precision

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\* The author bears in recollection an instance of a Lower-deck mate, who had imagined himself particularly expert and expeditious in the completion of his task, having made a sad blunder in "berthing" the ship's company's hammocks. The mate appearing on the quarter-deck, reported officially to the senior lieutenant the circumstance of his having "completed," as he termed it, "his troublesome task." "Sharp work!" returned his superior. "Come, I'll accompany you below to inspect your labours." The lieutenant repaired on the lower-deck, when, looking overhead, he discovered all the black numbers on *one* side, and all the red on the other. "Holloa! how is this?—Red, starboard side; black, larboard!" "All right, I believe, sir. You'll find each watch berthed on its *own* respective side." "Then, sir," returned the lieutenant, "I shall find that the mate-of-the-lower-deck has made a most egre-

so essential in the execution of this service, and to prevent those perpetual disputes which so often arise in consequence of faulty admeasurement, it will be found expedient to reduce every clew and hammock fore-and-aft to an equal length. New hammocks, when issued from the dock-yard store, generally run from five-feet six to five-feet four, but when properly squared, tabled, and reduced to the dimensions best suited for "berthing," they should be made to measure five-feet two.

To berth for the war-establishment the lower-deck mate will thus proceed:—

Commence forward, beginning with No. 1, and allow fourteen inches in width to each "single berth," and twenty-eight to each "double,"\* and from batten to batten,† or grummet to grummet,

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gious blunder. So when the ship's at sea, the *weight* of the watch below is to be all on *one* side." "I never thought of that, sir." "So it seems." The brush of the painter was immediately put into requisition to remedy the blunder.

\* For petty-officers. The hammocks of the boatswain's-mates to be berthed nearest the hatchways.

† Battens are getting out of fashion: screwed hooks are now substituted instead. But hooks, though neat and sightly to the officer, are not looked on by the foremast-man with a favourable eye. The fact is, the men complain that they have no means afforded them of *getting-in* and out of their hammocks.



eight-feet eight to each length of "longer." The locking-in will depend upon the carlins; but from eighteen inches to two feet will be found sufficient for any description of vessel. In measuring the "longer," it were desirable not to trust too implicitly to spun-yarn, lath, batten, or rod. Two hammocks cut the desired dimensions, and slung by clews of the established length, will at once shew the "locking-in," and will always act as a check on admeasurement derived by other means.

The berther is recommended not to paint the figures overhead until he fully ascertains the exact number of berths fore-and-aft. The numbers may be marked in chalk, employing over each an O for the starboard watch, and a X for the larboard. When all is right, and it is manifest that there is "no mistake," the painter may then "figure away" in any colour or colours the senior lieutenant may select.

#### TABLING AND NUMBERING HAMMOCKS.

THE mate-of-the-lower-deck should apply as early as possible to the senior lieutenant for the services

of a sail-maker and painter to table and number the ship's company's hammocks. He should also remind his superior of the necessity of having the *bags* "drawn" from the dock-yard among the first stores that may be issued to the ship. The bags should be numbered as soon as received, and put apart, till the paint be dry, before served out.

#### FITTING PORT-TACKLE-FALLS.

As, in all probability, the gunner will be in daily attendance at the gun-wharf, it will be incumbent on the mate-of-the-lower-deck to superintend the fitting of the port-tackle-falls. He should, therefore, apply to the senior lieutenant for one of the gunner's mates, and two or three of the gunner's crew, to execute this service, and to perform no other till each port-tackle fore-and-aft be finally fitted.

#### REPORT DAILY WORK IN PROGRESS.

WHATEVER work, or divisional duty, he may have in hand, the mate-of-the-lower-deck should make it an invariable rule to report progress every evening to the senior lieutenant. He should also

consult his superior upon the duty he will be required to perform on the following day.

#### SPARE LOWER CAP.

THE mate-of-the-lower-deck is particularly cautioned not to stow, or finally secure the spare lower cap below, until he has previously ascertained from the carpenter or commanding officer whether this article of "*fitted* furniture"\* has been *tried* and found to *fit*.

#### SPARE SAILS.

As soon as each spare sail be fitted, properly "*pointed*," and ready for making-up for stowage in the sail-room, the mate-of-the-lower-deck should thus proceed:—

MAKING-UP A COURSE.—Sweep well the sail, and clear it of all shakings, dust, and dirt; stretch then the head taut along the deck; bring up to the *head* the belly-band, then the foot, leaving the clew-blocks out at each end, also the bowline-bridles, and roll taut up. Pass the head-earings round the sail close inside the bolt-rope, and put a

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\* Vide CARPENTER, on "*Fitted Furniture*."

stop of good spun-yarn to every seam. The reef-earings are made up in the sail. Attach a label\* to each end of the sail when made up. The centre robin should be longer than the rest, to mark the middle of the sail.

**MAKING-UP A TOPSAIL.**—Stretch the head of the sail taut along the deck; bring the second-reef up to the head; dispose of the points snugly along in lines parallel to the seams of the sail; then bring-up the belly-band, then the foot, leaving the clew-blocks,† bowline-bridles, and reef-tackle, toggles each, and all separately *out*. Roll well up; stop well with spun-yarn at each seam. The head-earings expend round the ends of the sail. The reef-earings should be separately cleared, and hitched with two half-hitches to the reef-earing cringle *above*; and the centre eyelid hole, in the

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\* The mate-of-the-lower-deck must be prepared with labels properly painted on slips of canvas.

† With topsail sheet-blocks various modes have been tried. Some ships shorten the clews, and toggle the sheet-block into the clew. This plan answers well in small ships, but is not to be recommended in ships larger than that of the small class frigate. Though, as yet, little in vogue, no method will be found to answer better than the dog-bitch-thimble. This plan will always prevent the half-turn so often seen in the clew of the sail.

head of the sail, should have a long roband, or piece of line, for the purpose of *middling* the sail to the topsail tie-block on the yard. The topsails should be always stowed with a salvagee sling round the sail. The bight of the slings should *not* be passed through the opposite bight, but be stopped with spun-yard, so as to disengage the slings from the sail the moment the stop is cut. The long-tackles for sending the topsails aloft, should be coiled up at the length requisite for reaching from the orlop to the topmast-head, and ultimately stowed in the sail-room on the *top* of the topsail.

TOP-GALLANT-SAILS AND ROYALS.—As top-gallant-sails and royals are always bent to the yards when on deck, there need be no necessity to make them up with their clews and bowline-bridles left-out. The smaller the compass in which each is made up, the better for stowage below.

FORE-AND-AFT SAILS are always made up in the two after cloths.

JIB.—Stretch the luff of the sail taut along the deck, double the head in, then the clew, making the sail as near the same breadth at the head and foot as possible; then roll up, and stop taut at

every three feet. Spankers, stay-sails, trysails, &c. are all made up after the same manner.

STUDDING-SAILS.—The lower studding-sail, being nearly square, can be rolled up in either the inner or outer leach. Expend the earings round the head, and stop at every two feet.

TOPMAST STUDDING-SAIL.—Lay the sail along the deck, overhaul the downhaul through the thimble and block, and bight it along the whole length of the leach; then roll up towards the inner leach; lay the sheets along the whole length of the sail, roll up over all, and stop the sail well up with spun-yarn. Expend the earings round the head.

Top-gallant studding-sails are also made up in the inner cloths.

HINT.—The distinguishing labels which are to be attached to the spare suit of sails, should be affixed to *each* extremity of each sail before it is placed in the sail-room. The sail-maker, together with the mate-of-the-lower-deck, will be required to take an inventory of the unbent suit, noting particularly the disposition of the stowage.

The following Table shews the dimensions of the courses and topsails of line-of-battle ships, frigates, and sloops:—

Ship's Rate. No. of Guns.	Sails.	Head.	Foot.	Depth or Hoist.
Ship 110 Guns.	<i>Fore-Course</i> .....	Ft. In. 81 0	Ft. In. 78 0	Ft. In. 40 0
	Ditto Topsail ...	51 6	82 0	53 6
	<i>Main-Course</i> ...	93 10	97 0	45 6
	Ditto Topsail ...	60 9	96 0	60 9
Ship 80 Guns.	<i>Fore-Course</i> .....	80 0	77 0	45 0
	Ditto Topsail ...	51 2	82 0	54 3
	<i>Main-Course</i> ...	92 9	96 7	52 0
	Ditto Topsail ...	60 9	94 10	60 6
Ship 74 Guns.	<i>Fore-Course</i> .....	75 0	71 0	42 9
	Ditto Topsail ...	50 3	77 6	50 6
	<i>Main-Course</i> ...	86 0	90 6	48 9
	Ditto Topsail ...	57 6	87 6	57 3
Ship 52 Guns.	<i>Fore-Course</i> .....	75 0	71 0	41 0
	Ditto Topsail ...	50 3	77 0	50 6
	<i>Main-Course</i> ...	86 0	90 0	45 0
	Ditto Topsail ...	57 6	87 6	57 3
Ship 28 Guns.	<i>Fore-Course</i> .....	49 0	47 6	31 0
	Ditto Topsail ...	32 6	50 0	33 6
	<i>Main-Course</i> ...	55 8	60 0	34 0
	Ditto Topsail ...	36 6	56 9	36 0
Corvette 18 Guns.	<i>Fore-Course</i> .....	49 0	47 6	31 0
	Ditto Topsail ...	32 6	50 0	33 6
	<i>Main-Course</i> ...	55 8	60 0	36 0
	Ditto Topsail ...	36 6	56 9	36 0

A difference in the above dimensions must necessarily ensue if the contemplated scale of masts and yards be adopted in the service. *Straight* leeches will improve much the general appearance of the topsails.

SHIFTING FROM THE HULK.

THE noise, confusion, dispute, and personal danger consequent upon this proceeding, may be entirely avoided by permitting two men from each berth to remove gradually their mess utensils. A couple of days prior to the final "shift" would suffice to satisfy every purpose.



## IN PORT.

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### LOWER-DECK PORTS.

THE lower-deck mate should never permit the ports to be hauled-up or lowered at pleasure. In well-regulated ships a roll of the drum indicates the precise time when such movements are to be simultaneously made.

CELLS OF THE PORT CLEAR.—The clear appearance of the port-cells will always indicate the orderly condition of the lower-deck.\* Handkerchiefs and other articles of the people's apparel should never be seen suspended in the vicinity of the cells of the port.

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\* Some ships have racks fitted for the stowage of the men's hats—a desideratum with seamen.—Vide FIRST LIEUTENANT.

## RECEIVING COALS.

UPON every occasion of receiving coals on board, the mate-of-the-lower-deck should take the precaution that tarpaulings be properly placed in the port-cells and combings of the hatchways, previously to shovelling the coals in upon deck.

## MANGER CLEAR—CABLES READY FOR WORKING.

HE should never permit the manger to be lumbered, and should observe the same injunctions relative to working the cables which have been already given to the mate-of-the-main-deck.

## HAMMOCKS OF LIBERTY MEN.

IT is the duty of this officer to see that the hammocks of such men as may be absent from the ship on leave, be either stowed in the sail-room, or "taken up and down," by people\* appointed for the purpose.

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\* Vide FIRST LIEUTENANT—Principle of "Partners."

## A T S E A.

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COMPARED with the duties which devolve upon this officer in port, his labours when at sea will be comparatively light. He will, however, be required to pay the strictest attention to the dry, airy, and cleanly condition of the deck.

## LOWER-DECK PORTS, WHEN UP.

WHENEVER the lower-deck ports are "hailed-up," it will become an indispensable duty, on the part of the lower-deck mate, to keep a watchful eye upon the weather; bearing in recollection, that should the ship be taken in a sudden *squall*, the officer in charge of the watch may be too busily employed in shortening sail upon deck to divide his

attention between the ports *below* and the sails aloft. The mate-of-the-lower-deck will be also required to superintend, every evening, the carpenter's crew barring-in the lower-deck ports.

#### CLEARNESS AND SECURITY OF THE LOWER-DECK GUNS.

It being of the first importance that the lower-deck guns, when at sea, be kept perfectly free from lumber, and that they be thoroughly secured in every particular, the mate of this deck is strictly enjoined to give to the gunner every possible assistance in attaining these ends.

#### DRAWING-OFF SPIRITS—NAKED LIGHTS.

THE mate-of-the-lower-deck must never allow inflammable liquors to be "drawn-off" below. Spirits should be always hoisted upon deck, and drawn-off during the day. When the spirit-room is open, the lower-deck-mate should take the precaution that the master-at-arms, or ship's corporal, be at his post to prevent the use of "naked lights" in the cockpit or hold. When the spirit-

room is closed and secured, the key should be immediately returned to the master. On no occasion is he to allow lights to be used in the orlop, or cable tiers, except in good lanthorns; nor candles to be *stuck* against the beams or sides of the holds, or other parts of the ship.

*Note*—Those duties which immediately relate to the holds, tiers, and orlop-deck, are to be considered, in ships which “bear” a Second-master, as assigned to that officer.

## CAPTAIN'S CLERK.

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### PRELIMINARY REMARKS.

As new arrangements are in contemplation, touching the revision of "ship's books," it is sufficient here simply to say, that the clerk should be well versed in the principle of "book-keeping," and in the most efficient manner of *checking* accounts; nor should he be unacquainted with the rudiments of literary composition; as, without this knowledge, the despatches he may be required to write, on hasty dictation, will be deficient in the required perspicuity. As his situation is, in many respects, a confidential one, he should be circumspect in his conduct, and take for his motto the three words —TRUST-WORTHINESS, SECRECY, and TRUTH.

## GENERAL DIRECTIONS.

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### CLASSIFICATION OF OFFICIAL PAPERS.

WITH a view to ensure an orderly and systematic arrangement of public papers, and a ready reference to official records, the clerk should classify, according to their tenor and date, every description of receipt, voucher, and public document in the captain's possession, attaching to the exterior of each packet\* a distinct label, denoting its particular contents.

### SHIP'S BOOKS.

**MUSTER BOOK.**—It is to be hoped that the misnomer in the title of this book will soon be

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\* Confined by two small boards, one at the top, and the other at the bottom, secured by a small piece of light line.

removed; for, surely a book that embraces the various particulars required to be recorded in its several columns, ought to possess some other appellation than "*Muster-book*," as such would seem to indicate a mere list of *names*. The formula of this book is at present undergoing revision. Be the title retained or not, the book, it is said, will be a half-yearly register of "Muster," "Pay," "Victualling and Slops."

**THREE-MONTHLY BOOK.**—If the proposed system of paying the ship's company, by the purser, every six months, be adopted, it is probable that this book will be abolished. At all events, until new instructions be issued, the clerk should recollect, that from the "muster-book," or "complete book," is to be made out a quarterly muster-book, which is to be transmitted to the Admiralty-Office regularly on the 31st of March, 30th of June, 30th of September, and 31st December in each year; and the following instructions respecting it are to be most carefully attended to:—

"The day and date of the month upon which a muster is made, is to be entered at the top of the column, to denote the muster, while the following



marks against the men's names are to shew absence :—

- ✓ Checked on leave, or lent.
- × - - without leave.
- S - - sick at the hospital."

**SLOP-BOOK—ISSUE OF SLOPS.**—Although it is in contemplation to abolish this book, and to substitute, in the general "half-yearly account book," columns to contain statements of slops supplied; yet, for *rough* work, and particularly for reference, it will be necessary to keep a separate book.

When slops and tobacco are served to the ship's company, the clerk will be required to attend and to enter their issue.

#### ALLOTMENT BOOK.

No future alteration either in the registry of the ship's accounts, or of the people's pay, can supersede the necessity of keeping this book as a work of reference. Nor should the necessary cautions touching allotment "declarations" be neglected by the clerk.\*

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\* "No man is to be permitted, on the first fitting-out of the ship, to sign a "*Declaration*" of allotment of part of his wages until the

## REGISTRY OF OFFICERS' BILLS.

THE clerk should keep a separate book for the officers' bills; and he should never present for the Captain's approval a "quarterly bill," until the signature of the drawer be affixed.

## LETTER BOOK.

THE clerk will be required to keep for the captain a public LETTER BOOK, in which he will enter a true copy of every official communication his Commander may make. He should note in the margin, with *red ink*, the day and date, and by what conveyance each letter has been despatched. For example: By this day's post—Portsmouth, Jan.

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ship is nearly ready for sea, or until he has belonged to her *three* months. The commencement of every allotment to be regulated by the amount of charges already incurred; that is to say, if a man has received slops, or other allowances, to a certain amount, and is to be paid two months' *advance*, his allotment should be regulated so as to prevent his being in debt at the expiration of the first six months. Men desirous of allotting to a wife or child, are to be strictly questioned as to their having been married; and the place *where*, and the time *when*, married; and the Christian name of the child, and when and where baptized, are to be stated in the declaration; in which also the names of the men are to be inserted in numerical order, with their number on the ship's books."  
—*Naval Instructions.*

1st, 1835—Per *Pike*—Lieutenant Roach—at Sea  
—Feb. 1st, 1835.—Lat. in 49° 20' North; Long.  
in 14° 10' West.

#### LOG BOOKS.

INDEPENDENTLY of those periodical logs, which, on the termination of a cruize, the captain is required to present to the Admiral, or Senior Officer, under whose orders he may immediately serve, the clerk will have to keep two copies of the Ship's Log, one to be transmitted half-yearly to the Admiralty, and the other for the purpose of passing the captain's annual accounts.

#### PROMPT REPLY TO OFFICIAL LETTERS.

FROM the multiplicity of matters occupying the captain's attention, it sometimes escapes his recollection to reply to official letters. To prevent this, it will be incumbent on the clerk to remind the captain whenever a public communication requires a prompt reply.

#### WEEKLY ACCOUNTS.

THE clerk should be particularly careful that all returns inserted in the columns of the "Weekly

Account" be correct in every respect. He should procure from the master, surgeon, and purser, their several "Returns."

#### SIGNING OFFICERS.

THE signing officers of all "Muster Books" are to be the captain, the commander, or (where there is no commander) the senior lieutenant, the master, and the purser; but where any document to be signed relates to the receipts, expenditure, or disposal of stores, in charge of any officer, that officer is to sign it instead of the purser.

#### SICK-TICKETS.

WHEN a seaman or marine be sent to an hospital, or sick-quarters, for cure, a *sick-ticket*, signed by the signing officers and surgeon, is to be sent with him, in which his original entry, number, and rating on the "Muster Book," a description of his person, his age, &c., and all charges which appear against him on the ship's books, are to be inserted; and, on the back of the ticket, the surgeon is to specify the nature of his disease or hurt. An inventory of the man's clothes should accompany the

ticket, and on the latter should be noted whether the patient has or has not been victualled on board, the day of his removal. Should the patient be sent on shore for the cure of wounds received on duty, or in action, the clerk will insert on the ticket the following words:—"Sent to sick-quarters for wounds received on duty," or "in action with the enemy," as the case may be.\*

#### DISCHARGED-MEN CERTIFICATE.

SHOULD the annexed form of certificate be adopted, the clerk must be cautious that all particulars be inserted correctly, in the proper columns, before he procures the signature of the Captain.

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\* "Naval Instructions."

*The Form of Certificate, to be ruled on parchment, which is to double up in the middle.  
The outer side as follows.*

Name. <i>John Thomas.</i>		Date of Entry in the Service. <i>3rd June, 1820.</i>			His first Ship, and No. in her. <i>Britannia, 350.</i>		
Ships' Names.	No.	Rating.	Entry.	Discharge.	Y. M. D.	Conduct.	Captain's Signature.
Britannia	350	L. M.	3d June, 1820	10th Sept. 1823		Good.	G. Davis.
Caledonia	680	Ord.	11th Sept. 1823	1st Nov. 1826		Good.	C. Brown.
Endymion	270	A. B.	2d Nov. 1826	30th Sept. 1829		Very good.	T. Jones.
Madagascar	140	A. B.	1st Oct. 1829	4th June, 1832		Very good.	H. Mason.

**FORM OF INSIDE.**  
*Description of the person &c. of JOHN THOMAS.*

On his first Entry in the Service.	On his Discharge at the Age of 30 to 35.	After the Age of 35.
<p>Where born { Parish—  Town—<i>Falmouth</i>,  County—<i>Cornwall</i>.</p> <p>Usual Place of Residence—  Age—<i>20 years and 10 months</i>.  Stature—<i>5 feet and 8 inches</i>.  Complexion—<i>Ruddy</i>.  Eyes—<i>Light blue</i>.  Hair—<i>Light brown</i>.  Marks on person—<i>An anchor and four stars on right arm</i>.  Wounds or scars—<i>Scar on the left cheek</i>.</p> <p>If Invalidated: When  Do.</p>		<p style="text-align: right;">From what Station.</p>

## SURVEY REPORTS.

“THE reports made by Surveying Officers are to specify by whose orders the surveys were taken, and for what purpose; what were the articles ordered to be surveyed; the quantity and quality of those articles remaining on board, or the actual state of any which shall be particularly represented as deficient or defective. The number or quantity is always to be written in words at length. Should stores complained of be found no longer fit for their proper use, the reports are to specify whether they be fit for any other, and for what—or whether they be no longer fit for any other purpose whatever.

“There are to be two copies of all reports of surveys, each copy signed by all the surveying officers, and approved by the captain; one of which, written on the back of, or attached to, the order for the survey, is to be delivered to the officer in charge of the article surveyed; and the other to the captain, for him to transmit, if the survey was held by his order, to the officer by whose authority it may have been held: but when



the articles surveyed are to be transferred to the charge of another officer, a *third* copy, signed and approved in the same manner, is to be delivered to such officer, who is, if possible, always to be present during the survey.\*

#### PILOTAGE CERTIFICATE.

THE certificate, which the pilot is required to produce for the purpose of procuring his pay, "may, if necessary, be given in duplicate, or triplicate; but, in order to prevent more than one payment thereon," the clerk is cautioned, "that all be addressed to the same person and place, and that each be severally distinguished by the word *original*, duplicate, or triplicate."

#### REPORT OF SHIP'S QUALITIES.

THE clerk is reminded that one of these reports is to be transmitted to the Admiralty on the 1st of January in every year, and that another is to be left with the captain's successor, or delivered to the superintendant of the dock-yard on paying off.

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\* "Naval Instructions."

## SHIPMENT OF FREIGHT.

THIS officer will be required to take careful account of all specie, jewels, or valuable freightage deposited on board for security or carriage, and ascertain particularly that the several bags and boxes "*said to contain*" gold, silver, and jewels, accord in their external description with those mentioned in the bills of lading.

The clerk should also remind the captain that a return of treasure shipped, and of freight paid, or to be paid thereon according to the prescribed form, is to be transmitted to the Commander-in-Chief, or to the Secretary of the Admiralty. His attention is also directed to sending a duplicate of the said return to the Commissioners of Greenwich Hospital, under cover to the clerk of the check of that establishment.

A half-yearly general return of all freightage is to be transmitted to the Commander-in-Chief or the Secretary of the Admiralty, on the 1st of January and the 1st of July in each year. The clerk is recommended to peruse the "*provisions*" respecting the freight proclamations.

## CAPTAIN SUPERSEDED.

WHEN a captain is removed from the command of a ship, the clerk should present a list of every official paper which is required to be turned over to the custody of the succeeding commander. He should also procure for the captain retiring, a specific receipt for every thing "left in charge."

## SHIPWRECK.

SHOULD the ship be wrecked, the clerk should employ every endeavour to save those books which relate to the ship's company's pay. He should also consult with the captain, whether the signal books *should be destroyed or not.*

## FIRST COMMISSIONING.

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To insure accuracy in the public accounts, it is essential that this officer should join the ship upon the "*hoisting of the pendant.*"

### DEMANDS.

FOR STATIONERY.—Upon entering on office, the clerk should immediately "make out a demand" for stationery. When the signature of the captain, or that of the commanding officer, be affixed to this document, the clerk will deliver it at the office of the superintendant; where, upon "approval," will be issued the necessary supply.\*

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\* It is to be hoped that the proffered suggestion to simplify the supply of paper will soon be adopted. It is this:—The paper

FOR SURVEY BOOKS.\*—Early application should be made for these books. Those pertaining to the boatswain and carpenter are to be procured at the dock-yard; those for the guidance of the gunner, at the office of Ordnance Storekeeper.

FOR MARINES.—The clerk will procure the captain or commanding officer's signature to this application, which is to be addressed to the Commandant of the — division of Royal Marines.

*Note*—Upon the embarkation of the "party," the clerk will be required to enter a personal description of each man in the Captain's "Description Book."

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required for the period the ship is likely to be kept in commission is to be packed in a portable box, suited to the rate and size of the ship; the contents to be labelled on the *inner* part of the cover, and on the *outer* to be painted something to the following effect—"Stationary for First-rate. Three years' supply;" and so on, according to the rate of the vessel. Should the ship be short of three years in commission, the "unused stock" can be always returned into store.

According to the present system, the clerk is compelled to specify in the "demand" a minute statement of what is required; and for this the clerk has no guidance, the captain not being furnished with an official schedule.

\* These books are also *misnamed*. They are in fact but inventories of those stores which the warrant-officers are required to demand for the ship's equipment.

## DESCRIPTION BOOK.

THE clerk should register, as early as possible, the age, place of nativity, and personal description of each boy, seaman, and marine borne on the books. He will also be required to make a daily return to the captain of newly-raised men.

## ARTICLES OF WAR.

THE articles of war, and abstracts of Acts of Parliament for the encouragement of seamen, should be placed in some conspicuous part of the ship. Boards for this purpose will be supplied to the clerk on application to the carpenter.

## PORT ORDERS—GENERAL ORDER BOOK.

THE duty of copying the "orders of the port" devolve upon the clerk; and in this service he is cautioned not to indulge in delay. For the purpose of officers copying incidental orders, he will prepare a book, to be designated "*General Order Book.*" The book should be "fitted" with a canvas cover, loop, button, and becket, and labelled as above on the back.

## DAILY PROGRESS.

ALL particulars required to be inserted in the columns of this daily return, the clerk will derive from the senior lieutenant. Save when "sick," or when on "Admiralty leave," the signature of the captain is always to be affixed to this document.

## ASSISTANT SURGEON.

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### PRELIMINARY REMARKS.

No officer serving in a vessel-of-war has it more in his power to promote content afloat than the assistant-surgeon. When men are suffering from bodily affliction, and meet with kind and consolatory treatment, they soon discover the advantages and benefits derived from serving in a king's ship. The two objects which should be the chief study of the assistant-surgeon are, the administration of every thing that can insure the comfort and promote the recovery of the sick, and the acquirement of professional science. In addition to the chapter addressed to his superior, the assistant may benefit by the few following hints, under their respective heads.



## GENERAL DIRECTIONS.

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### ATTENTION TO THE SICK.

THE time and attention of the assistant-surgeon cannot be too constantly devoted to his patients, and particularly to the administration of comforts to those *confined* to the sick berth.

### SICK BERTH.

THIS officer is held responsible for the order and *cleanly* condition of the sick berth. The care and custody of the medicines, and disposition of the Dispensary, are duties especially assigned to him; and he is particularly enjoined to enforce the strictest prohibition of naked lights in

the sick berth. Nor should lint, loose tow, nor any inflammable ingredient, be placed in positions liable to ignite.

#### ADMINISTERING MEDICINES.

MEN-OF-WAR'S-MEN, like most other people, have little predilection for physic; and, when under medical care, the young sailor often enacts the "old soldier." The assistant-surgeon is therefore recommended to take the hint, and particularly to see that patients pitch not pills out of the port, nor consign draughts to the bosom of the deep.

#### SHIP NEVER TO BE LEFT WITHOUT SURGICAL AID.

ON no account is the assistant-surgeon to absent himself from the ship, or even procure permission from the commanding officer to leave the vessel, under any pretence, without previously obtaining the sanction of the surgeon. And if the latter happen to be on shore, or out of the ship, the assistant should prepare himself for the treatment of every casualty. If an accident be of that nature to call for superior advice, he should not

hesitate to request of the commanding officer to send for the surgeon of the nearest ship.

#### SICK LIST.

AFTER the surgeon and assistants have severally performed their morning duties, the senior assistant is required to return to the first lieutenant a list of the sick, a copy of which he is also to lodge in the binnacle drawer on deck, as a guide for the officer-of-the-watch.

Convalescents should be particularly specified; but the practice of pointing out patients, for the purpose of recommending them to execute *light* labour, should not be too sedulously pursued. Some patients, it is true, require occupation to dissipate gloomy thoughts; but, after all, picking oakum can only come under the denomination of fiddling of the fingers, and "teazing" the yarn tends more to teaze than to amuse the mind.

#### AIRING BEDDING OF THE SICK.

THE assistant-surgeon should represent to the senior lieutenant when it is necessary that the bedding of the sick should be aired upon deck; and beds and

blankets should never be placed in the boats or on the booms, unless permission be previously obtained from the commanding officer, when in port, or the officer-of-the-watch when at sea.

#### COOK'S COPPERS—CLEANLY CONDITION.

It is particularly the province and duty of this officer to examine daily into the state and condition of the cook's coppers, and to report to the senior lieutenant the result of such inspection. This duty is too often neglected; and, as negligence begets neglect, the cook becomes more careless of his coppers than his *coin*, and calculates less upon the poison of the verdigrease than the *profits* of "slush."

*List of Instruments with which the Assistant-Surgeon  
is to furnish himself.*

Two amputating knives—one ditto saw—metacarpal saw, with two blades—catlin—artery forceps—twelve curved needles—two tenaculums—two tourniquets—bone-nippers—two trephines—head-saw—raspitory—forceps—brush—elevator—two trocars—two silver catheters—elastic gum

catheter—six scalpels—key tooth instruments—  
three spare claws, different sizes—gum lancet—  
—tooth forceps, curved—ditto, straight—punch  
—seton-needle in scales—long probe—bullet  
forceps—probang—set of pocket instruments—  
twelve lancets—six pewter syringes—Fahrenheit's  
thermometer.

## CARPENTER.

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### PRELIMINARY REMARKS.

THE qualifications required to support this station are neither few nor easy of attainment. In the theory and practice of caulking, boat-building, mast-making, and in the general principles of naval architecture, the carpenter must not be deficient; nor should he be unacquainted with the relative power, property, and specific gravity of different timber. He should also be familiar with the most approved methods of appropriating spare spars for temporary purposes; and, upon all occasions of emergency, be competent to make the most, upon mechanical principles, of *scanty* ma-

terial. He may also be called upon to return "reports," or offer official opinions, touching the "qualities"\* and general "behaviour" of his Majesty's ships and vessels at sea—a requisite highly essential in the discharge of his calling.

The supposition that the carpenter's station is comparatively unimportant, may be considered in the light of one of those popular fallacies which have so long prevailed afloat. In the hour of danger, when the perils of the deep discourage, and even dismay the stoutest heart, the ingenuity and resources of the skilful carpenter may be the sole and immediate means of affording consolation, reviving the drooping spirits of a cheerless crew, and ultimately of restoring a happy confidence in all.

Like every officer afloat, the carpenter is cautioned never to employ that worthless word "*impossible*." It offends the official ear, and conveys no very favourable impression of the utterer's willingness to work. He should consider it as expunged from the naval vocabulary; and, in lieu thereof, adopt the more cheerful phrase, "*we'll try*."

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\* Vide article of "Ship's stability."

## GENERAL DIRECTIONS.

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### CARPENTER'S CREW.

THE carpenter should use every endeavour to procure an efficient crew;\* and return to the commanding officer an official report touching the capabilities of each artificer.

He should avoid familiarities with the people of his crew; and, upon all occasions, endeavour to control them with temper and becoming firmness. He will be required to superintend the carpenters when at work; and to warn his crew, collectively and individually, that no plank, spars, nor timber

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\* During hours of recreation on shore, zealous carpenters have before now raised volunteers sufficient to complete their respective crews.



be cut up, or appropriated to any purpose, till his previous sanction be obtained.

#### STORES AND STORE-ROOM.

THE carpenter will be held responsible for the order and ready disposition of his stores; and he cannot too often caution his "yeoman" of the dangerous practice of carrying or placing "naked lights" below in his store-room. He should return the key every evening to the senior lieutenant. He is required to submit, for the captain's approval, his "Expense-book" \* twice in the week.

#### DAILY RETURN OF DUTY PERFORMED.

THIS officer, every evening, should present to the senior lieutenant a return, in writing, of the duty performed during the twenty-four hours; and, upon the same occasion, submit to his superior a proposition of work for the ensuing day.

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\* The expenditure of stores, whether of those for present use, in lieu, or for sea-store, must be inserted daily in the Rough Expense-book; in which the exact date, for what use, and the names of the stores, and the quantity, in words written in length, must be specified in the proper columns thereof.—*Naval Instructions*.

## GRATINGS AND HALF-PORTS.

THE carpenter should keep the gratings in constant repair, and see that they are properly numbered for their respective hatchways; and, when unshipped, that they be each and all securely placed. He is never to permit the half-ports to be seen astray upon the decks.

## TARPAULINGS OF THE HATCHWAYS.

HE should attend, morning and evening, to the placing and re-placing of the tarpaulings pertaining to the different hatchways. If they be painted, he is recommended to roll them up on rollers, instead of making them up on the flat.

## TURNING THE COCK.

UPON all occasions of washing decks, the carpenter should be cautious that a careful and steady hand be placed in the wing to attend to the "turning" and stopping of the cock.\*

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\* Five feet of water was very unexpectedly discovered in the hold of the G—— frigate, in consequence of the carpenter stationed to attend the cock in the wing having fallen fast asleep. The crew had been employed in the tedious occupation of washing

## PUMPS, AND PUMP-WELL.

THE perfect efficiency of the pumps should be the carpenter's constant care. He should therefore frequently inspect their fixed and moveable geer, but particularly that pertaining to the chain apparatus. He will be held responsible for the healthy and wholesome condition of the well.

## PORT-LINING AND SCUTTLES.

IN a ship-of-the-line, the carpenter should constantly examine the "linings" of the lower-deck ports, and see that they be kept in proper repair. The same precaution should be observed in the scuttles of the frigate.

HINT.—Before cutting, for lining ports and scuttles, the "*fear-nought*" should be well wetted and dried.

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clothes, and scrubbing "hammocks and bags." The gauntlets and lines had been all filled and traced-up, fore-and-aft, when the mate-of-the-watch, abruptly opening the gun-room door, [for it was late in the afternoon,] most unceremoniously disturbed the officers at dinner by the unprepared "report"—"There's five feet water in the hold, sir."

The occurrence took place in Port. The author, on that day, happened to be a guest at the gun-room-table. The scene of confusion is spared to the reader.

## CAULKING AND SCRAPING.

THE caulker should never be permitted to “pay” his work until the scraping-party have ready at hand water, swabs, and scrapers. As soon as the pitch is cold, and thoroughly set, the seams should be sprinkled and swabbed, and immediately scraped. The scrapings should be collected, and lowered over the *stern*.

*Displacement of each Ship and Vessel when Launched, and when at Sea.*

Rate in Guns....	120	80	74	Razee 50	52	46	Razee Corvette 26	28	Corvette 18	Brig 18	
		Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.	Tons. Cwt.
Weight of the hull when launched....	2466 18	1892 6	1616 15	1447 18	1042 12	795 3	698 0	419 17	281 3	213 10	
Weight receiv- ed on board	2142 5	1723 14	1359 11	1044 8	1067 16	670 9	562 0	370 11	326 16	242 18	
Total weight when com- plete .....	4609 3	3606 3	2976 6	2492 6	2110 8	1465 12	1280 0	784 8	607 19	456 8	

(Abridged from "Edye's Naval Calculations.")

The following Table shews the difference in the immersion of a ship in fresh river-water and in sea-water; also, the relative quantities of water displaced in proportion to the body of the ship, or to the specific gravity of river and sea-water :—

Rate of Ship, or number of her guns.	Ship deeper in river-water than in sea- water.	Difference in the two load lines, from the specific gravity of fresh and salt water.	Quantity to raise or immerse the Ship an inch at the load or sea line.
	Inches.	Tons Cwt.	Tons Cwt.
120	5 $\frac{7}{8}$	Equal to 143 8	24 0
74	5 $\frac{1}{8}$	„ 93 14	17 17
46	3 $\frac{5}{8}$	„ 45 6	12 5
28	3 $\frac{1}{4}$	„ 24 6	7 9
18	2 $\frac{3}{4}$	„ 14 6	5 13

## FIRST COMMISSIONING.

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### SHIP'S FORMATION.

IF the ship be in dock, the carpenter is recommended to make himself thoroughly acquainted with the formation\* and peculiarities of her *bottom*. Fore-knowledge of a vessel's "build" has

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\* "The notion that ships ought immediately to taper, or become narrower from the midship-bend or frame, in order that the closing of the water behind them may push them forward, is a vulgar error. That the shape of fishes ought to be copied in ships is another; for what analogy can there be between the form of fishes, and the manner in which they move by the action of their tails, and the compact body of a vessel, which is impelled by her sails? The length of tail in a fish is necessary to its velocity, which naturally carries the extreme breadth near the extremity, with a certain strength in the shoulder to put that tail in motion. The analogy does not hold good. Yet these ideas have caused great blunders in naval architecture."—*Admiral Patton*.

often been attended with beneficial effects. In situations of peril, acquaintance with the ship's construction may not only be the means of allaying much of unnecessary alarm, but of suggesting expedients for surmounting difficulties, and escaping dangers, which, in all probability, never would have emanated from a mind ignorant of the vessel's form.\*

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\* The above observations are borne out by the following fact:—A ship, in which the author served, had, when working out of one of the long loughs on the N.W. coast of Ireland, got a-ground in a position exposing the vessel to considerable danger. The captain's commission (which was considered in equal danger with the ship) had hardly been read twenty-four hours to the crew—the new commander having only superseded his predecessor on the preceding noon. The ship had completed her ninth tack, and, in attempting the tenth, struck in stays, on an unknown shoal, or rather an undiscovered reef. In consequence of a long, rolling, ground-swell, the ship forged in with the shore, thumping the ground with considerable force. The boats were immediately hoisted out—anchors and cables laid in the desired direction—top gallant-yards and masts struck—preparations made for striking the top-masts; when, just as the captain had directed the booms to be cast adrift, for the purpose of procuring spars to shore-up the ship, the carpenter thus addressed him:—

“ Sir, there's no occasion whatever for a single shore. From the formation of the ship's bottom, her floor will prevent her ports taking the water.”

“ Are you perfectly sure of what you assert ?”

“ I've been six years in the ship, sir; and I'll forfeit my head if she falls over another inch.”

“ Keep fast the booms,” returned the captain; at once confiding



## EXAMINATION OF THE SHIP'S HULL, &amp;c.

THE carpenter will be required to examine every part of the ship's hull, the magazines, store-rooms, and cabins, and report to the captain or commanding officer all defects he may find.

## INSPECTION OF MASTS AND SPARS.

PREVIOUSLY to leaving the mast-house, the carpenter should inspect the masts, yards, and spare spars of the ship; and he should be particularly careful that the spare lower cap properly fits. If the lower masts be already in, he must remind the commanding officer of the necessity of *trying* the cap aloft. If the mast be not in, the mast-heads should be well greased before they are launched into the water.

## “ FITTED FURNITURE.”

THE carpenter is recommended to try, and satisfy himself that all articles that come under the mis-

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in the carpenter's report. The prediction of the latter proved to be correct; for, though an hour-and-a-half a-ground, the ship never required a single shore.

number of "fitted\* furniture" *do fit*. The following list may serve as a guide:—

<i>Sole Supply.</i>	<i>Spare Supply.</i>
Rudder-chocks. †	Boom-irons.
Bucklers.	Pump-boxes.
Horse-plugs.	Tiller.
Dead lights.	Wheel.
Rollers for messenger.	Lower and top-mast caps.
Chain cable, levers, and instruments of stopper.	Iron rollers, and sheaves pertaining to chain topsail sheets and ties.
Cat-head and shank-painter.	
Apparatus for disengaging the anchor.	

#### DRAWING STORES—TRANSPORTING SPARS.

UPON every occasion of drawing stores, but particularly in transporting spars of a heavy nature, the carpenter should pre-arrange with the senior lieutenant as to the *time and tide* best suited to the purpose.

He should also consult with the master upon the propriety of nailing battens between the beams on the orlop or after-hold, for the purpose of stowing

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\* It is singular that this designation should be given to articles which are frequently found *not to fit*

† Captain Hayes, the naval architect, has invented an admirable rudder-chock. It is merely a catch of iron, and is far more simple and manageable than the two cumbrous blocks now in use.

away spare plank. Nor should the spare anchor-stocks be stowed until the sanction of the senior lieutenant be obtained.

#### BAR AND BOLT IRON.

ALL bar and bolt iron should be stowed securely between the beams in the after-hold overhead, and on no account kept in the *store-rooms* or *wings*.

#### DOCK-YARD ARTIFICERS.

WHEN the dock-yard artificers are employed afloat, the carpenter should avail himself of their several services in the fitting of those lockers necessary for the stowage of spare geer and rigging tools. The stoppers for the lower rigging should always be kept at hand upon deck. A locker is sometimes built upon the forecastle, for the convenience of placing these, and other articles of fitted rope. The forecastle is best suited to this purpose. The locker then is under the eye of the boatswain.

#### HAMMOCK CLOTHS.

BEFORE removed from the dock-yard, the carpenter should be cautious, that the painted hammock-

cloths be properly dry. He should consult with the senior lieutenant, as to the manner in which the hammock-nettings are to be fitted.

#### BOATS IN THE BOAT-HOUSE.

THE carpenter should occasionally visit the boat-house, and, upon each visit, report to the senior lieutenant the state of forwardness, or readiness of the ship's boats. Before finally leaving the Camber, he should see that their 'furniture' be complete in every respect; he is recommended to request that the boat-builder may fit the bottom-boards of all the boats with small staples and toggles. By this plan, the bottoms of the boats can be cleaned with facility. When the bottom-boards are nailed to the timbers the nails require to be drawn, and to be again driven, on every occasion when it is necessary to cleanse the bottom of the boat. The system of nailing and re-nailing the bottom-boards tends materially to injure the timbers of the boat.

HINTS.—See shipped the awnings, stanchions, in all the boats, and examine well the launches, windlass, and carronade-slide.

## PATENT CAPSTAN—FORCE-PUMP.

SHOULD this pump, capstan,\* or aught of other machinery pertaining to the ship, be fitted on a new or experimental plan, the carpenter should make himself acquainted with their respective properties, peculiarities, and mode of action.

## LIME—PITCH—OAKUM.

THE carpenter is cautioned to receive no lime on board unless it be properly *slaked*. Nor is his yeoman to stow loosely below old canvas, picked oakum, or pitch.

## LINING AND PAINTING THE SHIP.

WHEN it is necessary to “line”† the ship, preparatory to painting, the carpenter will accomplish his purpose with more of accuracy, and less of

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\* It becomes requisite to examine, and oil occasionally, the external machinery of Phillips’s capstan.

† When a good line has been struck off, it is recommended to place a small feather-edged batten on the upper line at least: by this precaution a correct line will always be preserved. The battens should be nailed on with *copper* nails.

trouble, by not following the common-place practice of tacking the lead-line along the side. Battens are best suited to the purpose, and are "dropped," or raised, with equal ease.

HINT.\*—The formation of a "*line* is better effected by white-wash than by other means;" and at all times previously to laying on paint, pitch, and tar, spots on the ship's side should be *scraped* with knives in preference to scrapers. It is always desirable, particularly in the white line, to insert a little white-wash into the pitch seams on the side, filling them up afterwards with pliable putty, containing a considerable portion of white lead. It is not recommended to blacken the bends; and the bends should be plained previously to painting. Paint will always look better, and will never, like blacking, turn brown from the combined effects of the weather and salt water. Moreover, in hot climates the copper will never be disfigured. Ships which black their bends have always their copper streaked with the droppings of the blacking from above.

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\* When the painting of the ship is finished, the carpenter should collect all the brushes, cleanse them, and put them into fresh water.

## PAINTING YARDS.

It were much to be desired, that the practice of blackening yards were abolished. Paint will be found to preserve the wood equally well ; and, when working aloft, the clothes of the seamen will never be damaged. At all events, the top-gallant and royal-yards were better painted, if officers are desirous of keeping the top-rims clean.

## PENDULUM—SHIP'S INCLINATION.

THE carpenter should consult the senior lieutenant as to the position in which it may be deemed desirable to place the "Pendulum," which is to denote the heel, or inclination of the ship, when at sea. The pendulum is generally made by the armourer and joiner of the ship ; but it is to be presumed, that, upon proper application to the superintendent of the dock-yard, this useful instrument will be formed and fitted by the artificers of that establishment.

## TOPS AND CAP-SHORES.

As soon as the tops are swayed over the mastheads and properly placed on their respective cross-trees,

the carpenter will cause them to be *immediately* bolted. Serious accidents have occurred from postponing\* this necessary service. Nor should he neglect to bore holes through the bottom parts of the several cap-shores. Through these holes a laniard should be rove, to prevent the possibility of a cap-shore† falling from aloft when at sea.

#### FIRE SCREENS.

THE fire-screens pertaining to the magazine hatchways of the different decks should be fitted and tried as early as possible.

#### SPARE TOP-MASTS, &c.

THE carpenter is cautioned to remind the senior lieutenant of the absolute necessity of *fiddling* the

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\* The author recollects an instance in which the tops of a sloop-of-war were discovered floating in Porchester Lake the morning subsequently to the evening when they had been swayed aloft and placed upon the cross-trees. The tops had been got over somewhat late in the evening, and the carpenter, considering them perfectly secure, permitted them to remain unbolted for the night. A gale of wind came on in the first part of the middle-watch, and the tops were found missing in the morning.

† In some ships, cap-shores are dispensed with; but it will be found, particularly upon striking top-masts, that the weight of the spar and top-mast rigging brings a considerable strain upon the fore part of the cap, which causes it to droop and bind the mast in the cap.



spare topmasts, and of running out all the studding-sail booms before they be finally stowed on the skids. These precautions are frequently neglected; and hence it is when ships go to sea, and have occasion to shift a spar, that a topmast binds in the heel, and requires considerable alteration before it can be *fidded*. The same remarks are applicable to the studding-sail booms.

STOWING BOOMS.—Vide *Boatswain—First Commissioning*—under the head of “Stowing Booms.”

#### MOULDS FOR ARMOURER’S WORK.

WHEN it is requisite to fit hammock-stanchions, or to insert rollers in the hoops of the masts, the carpenter should be cautious to give accurate models to the blacksmith. He should also take the moulds himself to the master blacksmith, in order that no mistake may be made by the journey-men when working at the forge.

#### INDENTING.\*

THIS indispensable duty is too often deferred to the last moment. The carpenter should recollect

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\* The indents and supply-accounts must be carefully examined in order to ascertain, before the ship leaves the port, that every article inserted therein has been actually received. And it is to be

that, previously to putting to sea, his services are of more consequence afloat than ashore. The *hint* will suffice.

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understood, that, if any of the boats, oars, or other stores, allowed for harbour-service, be taken *to sea*, the value of the same will be charged against the warrant-officer's pay."—*Naval Instructions* .

IN PORT.

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THE duties of the carpenter in port will depend upon the repairs that the ship will require. He should, however, in harbour, as well as at sea, return a report to the commanding officer, touching the state and condition of the ship, and particularly of the *boats*.

## TURNING THE HANDS UP.

WHEN the hands are turned up for the performance of any specific evolutions—crossing top-gallant-yards, loosing or furling sails, hoisting in, or out, boats—he is not to dispute with the mate-of-the-main-deck, or question the propriety of proceeding with work in-hand, or of “breaking the

carpenters off," but, unless especially directed by the commanding officer, he should encourage his crew to hasten to their respective stations.

#### PUMP WELL—HOT CLIMATE.

IF in a tropical climate, he is recommended to pay particular attention to the state of the pump-well, and to suggest to the commanding officer the adoption of the purifying practice of introducing water into the well, and pumping it out twice or thrice during the night. This practice\* will be found to cool the air on the lower deck.

#### FIRE ENGINE.

AT sun-set, he should report to the commanding officer, the fire-engine and force-pump in order for use, and that the winches of the chain pumps are ready for shipping.

#### SHIP'S DRAUGHT OF WATER.

THE carpenter should obtain the ship's draught of water as soon as possible after the ship has anchored

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\* The propriety of this practice has been disputed, but it has been adopted in many ships with considerable success.

in port. Previously to leaving port, he will do well to return to the master an official report of the draught forward, aft, and particularly at the midship port of the lower deck.

#### RUDDER COAT.\*

THE carpenter should see that the rudder-coat be in perfect repair, and that the tiller be firm in the rudder-head, previously to putting to sea.

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\* Vide "Practical Hints," for dimensions of Rudder-coat.

A T S E A.  

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## DAILY INSPECTIONS.

**MORNING.**—As soon as the decks are washed and dried up, the carpenter should examine the masts and yards aloft, and report to the officer-of-the-watch their state and condition.

**EVENING.**—He will be required at evening-quarters to inspect the wings, &c. in order to satisfy himself that the shot-plugs, mallets, and mauls, be placed at hand, and every thing in his immediate department ready for action; he will report accordingly to the senior lieutenant. Should the wings or passages in the vicinity of the ship's side be obstructed by lumber of any description, he should

make known the circumstance to the commanding officer.

#### BARRING IN STERN AND LOWER-DECK PORTS.

In the ship-of-the-line he should superintend the barring in of the lower-deck ports, and, when completed, report the same to the senior lieutenant.

In the frigate, or flush-deck vessel, he will consider the same directions to extend to the stern ports.

In the latter vessel, the carpenter should be careful that before night-fall the gratings be shipped, the tarpaulings placed, and that the dead-lights, and every requisite for battening down be in readiness, in the event of it coming on to blow. When the hammocks are piped down, he should report to the senior lieutenant that the above preparations are made.

#### REPAIR OF BOATS.

THE carpenter should constantly examine the boats on the booms, quarters, &c., and report to the senior lieutenant on every occasion that they may appear to him to require repair.

## INSPECTION OF SPARE SPARS.

HE should, from time to time, examine the spare spars, particularly the top-sail and top-gallant-yards, and see that they be always kept in a state of readiness for immediate use; that all their pins, sheaves, and sheave-holes be in due order, and that their respective cleats be properly placed.

## GOING INTO PORT.

HINTS.—Present-use demands to be made out for captain's approval. If annual accounts are due, apply for survey on "*Remains*"—Demands to complete—Ship's defects—Take off hause-plugs bucklers—Obtain draught of water.



## PRACTICAL HINTS.

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### STABILITY.\*

“It frequently happens that ships which have been at sea are said to require an increase of masts and yards; and the necessity of making alterations is suggested, by the impression of experienced seamen, who compare the inclination or heel of the ship, on which they offer an opinion, with the performance of other vessels, whose character they happen to know. In this manner the question becomes one of *comparison*.

Assuming that nautical men can speak with confidence on this point, without the opportunity of

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\*Abridged from “Chatfield’s Pamphlet on Naval Architecture.”

experimenting with other vessels—that we have the means of trimming a vessel to any required lateral inclination, by way of trial—those who are competent to decide, whether she heels too much, or too little, may also determine, on the same principle, what would be the proper deflection when certain sails are set, and every weight on board in its proper place.

Nothing is more common than to say that a ship wants so many feet taken off her lower masts, or that they want that quantity added; but, however obvious may be the necessity of a reduction or increase of spars, it is, at best, speculation to venture an opinion as to quantity upon any authority not founded on calculation and scientific considerations.

Opinions of ship's qualities are mostly given in too *general* terms. The following are usually found in the official report of the ship's sailing qualities:—

#### STABILITY AND ROLLING.

“ How does she stand under her sail ? ”

“ Crank—rather inclined to be crank—well—pretty well—very well—stiff—very stiff—crank with lofty sail stiff, with lower, &c. &c.”

Statements of this kind may serve to give a general idea of a ship's character and "behaviour at sea;" but such reports cannot answer the purposes of a naval architect, who can only improve known imperfections in construction by possessing data, which will enable him to go into the nicest calculations; consequently, if a vessel be called "crank," the reporter should state the angle to which she inclines when he thought her *too* far depressed; also, the quantity of sail then set; the sea running, and the state of the weather. He should likewise give an opinion, stating the number of degrees beyond which he conceives the ship ought *not* to have heeled.

The great evil of undefined expressions, such as "Well"—"pretty well"—"very well," &c., is, that no two persons, perhaps, mean the same thing, when they explain themselves in that manner; "well" being a matter of opinion, and, therefore, leaving only a relative signification. Different persons too, in the same ship, possibly may give different accounts; hence the necessity of definite terms.

Another part of the "report," which refers to the stability of the ship, is as follows:—

“ *How does she carry her lee ports?* ”—“ Low ”  
“ rather low ”—“ very low .”

Now the height of *port-sills* above the water in tempestuous weather should be sufficient to avert any inconvenience that may arise from the undulations of the sea. There are, also, other things—such as the disadvantage of fighting against a more elevated battery, &c. Information respecting the height of ports should be expressed in “ feet and inches,” and may be best ascertained from the drawings of a ship, after having learned the angle to which she was inclined ; it being utterly impossible to speak with accuracy from actual measurement at sea.

The ROLLING of a ship is stated as follows :—

“ *How does she roll ?* ”—“ Deeply ”—“ quickly ”  
—“ easily,” &c.

These terms are extremely inexplicit, and perfectly unavailable to scientific navigation.

A report on ship's sailing qualities is supposed to be a very perfect statement of their actual performance at sea ; *opinions* should, therefore, come under the head of “ Remarks.”

An instrument for measuring a ship's inclination may be always used with advantage ; and were it

generally established, and the results of observations carefully attended to, it would lead to much good in advancing the theory of construction.

For example, if a ship be pronounced to be “over”-masted, observe her inclination when she is said to be too far depressed. Suppose that angle to be 13 degrees; then, by the adjustment of the weights on board, or by shortening sail, trim the ship to the angle beyond which it has been determined she ought not to heel,—say 10 degrees, under the first circumstances of carrying sail, &c. If the inclination be diminished to the approved angle of 10°, by the method first proposed—viz., an adjustment of weights—the result required must be obtained by calculating the stability of the vessel at 13°, also at 10°, and by making use of the following proportion:—

Calculated Sta-    :    Calculated Sta-    : :    Moment of    :    Moment of  
 bility at 13°    :    bility at 10°    : :    sails given    :    sails required.

The fourth term of this proportion will furnish the requisite information for correcting the rigging draught, or making a plan of sails on a reduced scale; and the quantities made use of had better be previously collected in a table of the annexed form:—

Ship's absolute inclination.	Sails set.	Rate of sailing.	Remarks on the weather.	Angle to which the ship should have inclined had she possessed proper stability, determined by a comparison with other vessels, or by the opinion of competent persons on board.
13° or 8°	Courses, top-sails, top-gallant sails, jib, fore-top-mast stay-sail, and spanker.	8 knots 6 fathoms.	Fresh breezes.	10°

But if the inclination be lessened by *shortening sail*, the exact quantity and disposition of the sails then set must be carefully registered; their moment may then be calculated, which will at once be the result required.

In the next place, suppose a ship to be *undermasted*, or to require an increase of canvass, then proceed as follows:—

Observe the degrees of inclination to which the vessel actually inclines, (say 8°,) then, by an adjustment of the guns, or other great weights, cause the vessel to be deflected to the adjudged angle, (say 10°,) as in the last experiment. The following

proportion will then give the proper moment of sail :—

Calculated Sta- bility at 8°	: Calculated Stability at the greater or approved angle 10°	:: Moment of sails given	: Moment of sails required
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### LEAKS—PRESSURE OF WATER AT DIFFERENT DEPTHS.

“WATER,” says Gower, “presses at the square-root of its altitude; that is, suppose equal holes be made in the bottom of a vessel at one foot, four feet, nine feet, and sixteen feet, *beneath* the surface of the sea, the water will rush in at these holes with a velocity equal to the square roots of their respective depths. For example,\* at the four-foot hole

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\* Between the above example, given by Mr. Gower, in his “Treatise on Seamanship,” published in 1808, and the following Case, published by William Hutchinson in 1787, there will be found a *close* similitude :—

*Case*—“If a ship has the flattest part of her bottom lying sixteen feet deep (which is often the case), the water then presses sixteen times as much upwards against this flat part as it does upon any part of the same ship about the water’s edge, and so on to any other part, according to its depth. For example, suppose this ship to have four leaks, or plug-holes, of equal bigness, that could be driven out occasionally,—the first at *one foot* under water—the second at *four feet*—the third at *nine feet*, and the lowest at *sixteen feet* in the flat part of her bilge; that hole at *four feet* deep would leak or let in as much water again, in the same time, as that at *one foot* deep; and that at *nine feet*, three times as much; and

it will rush in twice as fast as at the one; at the nine feet, three times as fast; and at the sixteen feet, four times as fast; which is the law it will follow, provided the water be pumped out as fast as it comes in. But if the water be suffered to rise in the vessel, and to cover any of the holes, the covered holes will then run with the same velocity, regardless of their depths,—which velocity will be as the square-root of the difference between the level of the water *within* and without the vessel. For instance, let it be presumed that the hole of sixteen feet was quite at the *bottom*\* of the vessel, and that the water had risen in her twelve feet; then, as its surface is even with the four-foot hole, those two which are covered will run with the velocity only of

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that at sixteen feet, four times as much, though it run into the ship upwards, and so on in proportion to the square-root of the height of the water above the leak or plug-hole. Therefore, leaks in ships are more or less dangerous, according to their depth under water."

\* The reader will perceive that the writer, contrary to custom, counts downwards from the surface. His illustration will be made more intelligible by the following extract, which is here cited as an explanatory passage:—

"On first springing a leak, it will rush in faster till the water inside is as high as the place where the leak is, and will pour in *less* the higher it gets inside."—*Griffiths's Practical Hints.*



that hole in the four-feet position, since four feet is the difference of the water within and without the vessel. Hence, if a ship spring a leak under her bottom, although the water should increase upon the pumps at *first*, yet after it has risen to a certain height above the leak, the pumps will then be able to prevent its rising higher." \*

HOW TO DISCOVER A LEAK AT SEA.—The following rules may lead to the discovery of a single leak :—

1st.—Should the ship increase making water as she sails, the leak is in the bow ; but if, on the

\* In a frigate in which the author had served, this fact was somewhat paradoxically *defined* by a lieutenant of the ship, a native of the Sister Isle. The ship, during a heavy gale of wind, struck upon a dangerous shoal ; six feet water was soon in the frigate's hold ; and upon the captain's expressing his apprehension that the "people at the pumps could not possibly *keep the ship free*," the Milesian lieutenant immediately replied—"Don't be *wnaisy*, Sir,—the *more* that comes in, the *less* there'll be!"—This Hibernianism produced a laugh, though it was no laughing matter. Still, upon further inquiry, Pat's theory, bordering as it was upon the *bull*, was, nevertheless, discovered to be founded upon philosophical principles.

The truth is, the lieutenant "was no fool ;" his object was to produce a laugh, and to put to the test of truth the old adage, "Let those laugh that win." They did *win*. The people gained on the leak.

contrary, she decreases making water as she sails, the leak is in the stern.

2dly.—If, when sailing before the wind, the ship makes neither more nor less water, the leak is on either side, which side may be discovered by bringing the ship to the wind; if the ship then makes more water, the leak is on the lee-side; if less, it is on the weather-side.

It has been asserted, that, by following round a leaky vessel, in a calm, with a pole, keeping one end applied to the ear, and the other to the vessel's bottom, a rumbling noise will be heard vibrating up the pole, if its end happen to pass near to the leak. By this method the position of the leak may be discovered.

#### TO FISH A LOWER-YARD IN THE SHORTEST TIME.

INCALCULABLE are the evils which may result to a vessel from the “springing” or snapping of a lower-yard, especially the *fore* one. A ship may be placed in so perilous a situation, and time so pressing, that the very existence of the vessel may

depend upon the *despatch* with which this important spar can be repaired and replaced.

The following strong and expeditious method has been twice tried, and with eminent success :—

If the yard be severed, get both pieces down on deck, and place them together to assume, as nearly as possible, their original position. Hollow out, so as to fit the cylindrical surface of the yard, two spare-anchor stock-pieces ; in doing which, a depth of two or three inches will suffice. Place one piece on the top, and the other secured to the under part of the yard. Towards their extremities dub down the superfluous wood, and round the edges ready to receive the requisite woodings.

Preparatory to boring holes for the bolts, set close to the anchor-stock-pieces, with wedge upon wedge. Introduce then eight or ten bolts of inch or three-quarter-inch diameter, which must be severally clinched. Cut scores for eight or ten woodings, and wood-away with *well-stretched* rope of three or three-and-a-half-inch. The yard may then be replaced aloft. There will be found no necessity for studding-sail-booms, or other spare spars.

This method has been transmitted to the author by one of the most experienced seamen and intelligent officers in His Majesty's Service.

“ In two instances, on board of 44-gun frigates, I witnessed,” says the writer, “ the success of this expeditious plan. In the first, the main-yard went in two pieces, about ten feet from the slings. The accident occurred at eight A. M., and at six P. M., on the same day, the main-yard was in its place, and the main-sail set.

“ In the second instance, the fore-yard was carried away about the same distance from the centre, and was repaired and replaced in about the same interval of time.

“ Both ships, for several weeks subsequently, had to contend with heavy gales and bad weather, yet the repaired yards stood as well as they did prior to the accident.”

#### TO MAKE A TEMPORARY LOWER YARD.—

“ When a lower yard is entirely carried away at sea, it is not uncommon to make a yard with the spare spars supplied to the ship. This is frequently done by bringing two studding-sail booms end to end, which together makes up the length of the yard ;

then to scarph them by bringing the spare topsail and top-gallant-yard in the middle, and other small spars, as top-gallant studding booms, &c., to make up the form of the yard. When the different spars are so placed as to overrun each other in the best possible way, they are then well woolded together, and the yard is formed.

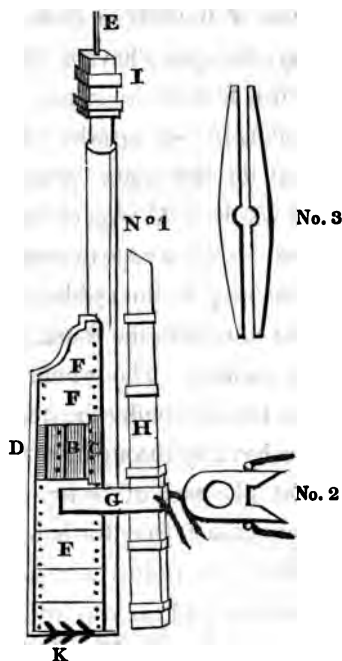
“ The rolling of the ship makes it frequently difficult to keep the spars together, till woolded ; in which case it is better to lay any inferior pieces on the deck, as skids, and fix the lower ends of some capstan-bars into them, with their upper ends guyed to the sides of the ship ; by this means the different spars may be kept sufficiently steady to woold in a proper manner. Whatever part the wooldings are applied to, it is necessary to fit chocks between the spars to keep them firm, and for the woolding to lay fair over them, so as not to *wound* the spars.”\*

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\* “ Mast-making.”

PACKENHAM'S TEMPORARY RUDDER.

THE following figure is intended to illustrate this admirable invention.



No. 1, is a top-mast inverted, which forms the main piece of the rudder, the heel of the top-mast becoming the head of the rudder, and which

is so secured by anchor-hoops, *I*, that the fid-hole may be increased to receive a tiller. This main piece is pointed through a top-mast cap, which is enlarged, that it may turn freely in it. No. 2 is a representation of the cap, with its square part cut out to fit the stern-post, having fixed to it the top chains. *B*, No. 1, is the inner half of a jib boom; *C*, the outer half; *D*, a fish; all of which are firmly bolted to the main piece, and planked over, as *F F F*, &c.; *K*, pigs of ballast to sink the heel of the rudder; *E*, a rope to suspend the rudder; *G*, the cap, as fitted to the rudder; No. 3, anchor-stocks cut out to receive the round part of the main piece of the rudder. The whole machine being prepared, it is then got under the stern, and the head of the rudder hove up through the counter to a necessary height. To each of the top-chains, bend the end of a hawser, taken from the hawseholes, on each side, and, bearing the rudder a midships, heave well taut both hawsers, and the cap will become firmly secured to the stern-post, *H*. This accomplished, the anchor-stocks are next to be secured round the rudder head to the deck it comes through, in order that they may act as an upper gudgeon in which

the rudder is to turn. The tiller &c. being fixed, the rudder may now be considered as complete and fit for service.

#### GRIFFITHS'S JURY RUDDER.

CAPTAIN A. GRIFFITHS has also proposed a plan for a temporary rudder.

The loss of a rudder is generally the result of a ship getting on shore, at which time it not unfrequently happens, that the vessel either loses, or is compelled to cut away, her masts. In such case, the inventor considers that the cap and top-mast can be very ill spared. He therefore thinks it best to make the rudder out of the two spare "Fish;"\* and thus proceeds:—

"Let the fish be cut off the requisite length, the heels brought together, and the upper ends, where the tiller is to ship, exactly the width apart necessary

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\* "In my own opinion," says the inventor, "these are the better material, and can at all times be better spared, on the principle, that, if necessary, a 'top-mast' can be very readily converted into a *fish*, but the fish cannot become a *substitute* for the top-mast." Captain G. states, that an admirable rudder for the 'Abraham Newland,' a West-Indiaman, of near 700 tons, was made on this principle.



to admit the tiller,—to become, in truth, the tiller-hole. A yard-arm piece, or any broken spar, for the filling piece,\* in the vacancy thus left between the two fish ; and another filling piece in like manner *above* the tiller hole. Then bolt the two fish and filling pieces together, and secure the head by the anchor-stock hoops. The rest to be made the same as if the top-mast had formed the same piece ; only perhaps it would be better to bolt these back pieces on, so that the bolts may take hold of both the filling piece and fish, to be driven a little slanting, or diagonally.

“ The security against the pressure of the tiller is greater than in the top-mast, where the substance of the fid-hole is to be so *much* cut away.

“ Where the cap is to form the lower security the fish must of course be *rounded*.”†

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\* Doubtless the author intended to have said, “ may be used ;” the sense of this sentence is incomplete if this expression be not employed.

† “ Practical Hints.”

*Comparative Weight of Timber in a Green and Seasoned State.*

DESCRIPTION of TIMBER.	Cubic Feet.	
	Green.	Seasoned.
	<i>lbs. oz.</i>	<i>lbs. oz.</i>
English Oak .....	71 10	43 8
Dantzic Oak .....	49 14	36 0
African Teak .....	63 12	60 10
Indian Teak (Malabar) .....	...	52 15
Indian Teak (Rangoon*) .....	...	26 4
Indian Mast Peon .....	48 3	36 0
Cedar .....	32 0	28 4
Larch .....	45 0	34 4
Riga Fir .....	48 12	35 8
New England Fir... ..	44 12	30 11
Elm .....	66 8	37 5
Beech .....	60 0	53 6
Ash .....	58 3	50 0

\* The Malabar Teak is the heaviest, and the Rangoon the lightest, of all Indian Teaks used in ship-building.

*Note*—The average weight of the timber materials in a ship or vessel-of-war is about 50 lbs to the cubic foot; and for the masts and yards about 40 lbs.—*Edye's Naval Calculations.*

## TEST OF SPAR TIMBER.

“ To become familiar with the different kinds and qualities of fir timber, requires considerable practice and close observation, with, likewise, a proper acquaintance with some of the general appearances that distinguish these qualities. The firs most desirable are those of the fine and close grain,—the wood strongly charged with resin, which is not only beneficial in giving strength and elasticity, but preserves the timber from insects, and prevents fermentation and decay. The colour should be of a clear bright yellow, with a reddish cast alternately. The smell in the Riga firs, and others of this quality, should be strongly resinous, especially when they are exposed to the sun, or any other heat, or when their shavings are rubbed between the fingers. On the contrary, when the layers are separate, porous, or open, with tints of a pale red near the heart, and white spots intermixed, or of a dark red, with the resinous particles of blackish colour, the timber is in a state of decay. In yellow and red pines that have not the strong resinous smell, the degree of unsoundness is denoted by the offen-

siveness of the smell ; and they will, in common with other firs, have alternate layers of a foxy brown or red colour, and will break out before the sharpest plane in being wrought.

The experienced mast-maker forms his opinion of the quality of a stick, not only from the colour, smell, and appearance of the grain, but by its working ; for a stick is more or less frough or fragile, the greater or less difficulty he has in separating its parts, as he chops them off. If the timber is good, its parts, on being separated, appear stringy, and oppose a strong adhesion ; and the shavings from the plane will bear to be twisted two or three times round the fingers ; whereas, if the stick is of a bad quality, or in a state of decay, and has lost its resinous substances, the chips and shavings come off short and brittle, and with much greater ease.”\*

#### TO DISCOVER DEFECTS IN MASTS, &c.

SPRUNG SPARS.—Springs are discovered by shans and fractures, and sometimes by the fibre suffering

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\* “ Papers on Naval Architecture.”

by compression, while the continuity of the fibre is not wholly overcome;\* shans are mostly in consequence of the defect of the materials, most commonly from bad collared knots, and from the range of fibre not being in a direct line with the mast, &c. Fractures are generally discovered in two forms, one with a *black* waved and jagged line across the mast, &c.; the other forming, between shakes or longitudinal openings, short fractures, that rise one above the other, in the form of steps: this is commonly called "Jacob's Ladder." This fracture in general takes place in *single-tree* masts and top-masts. It is a defect that seldom admits of repair.

When the mast *complains*, or gives any sign of weakness without any external appearance of decay or fracture, it may be considered as arising from internal defect, especially if the mast has been in service more than five years.

MAST-BUCKLEING.—When any part of a mast &c. suffers by compression or buckles, or what is technically called, having the "grain upset," and the fibre, in different parts, takes a sinuous form,

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\* This compression of timber is discovered in new sticks or trees.

it is a proof of considerable weakness, and that it must, if a *made* mast, have worked considerably. This defect, however, is common to masts of small vessels, that have considerable rate.

DEFECTS OF LARGE LOWER MASTS. — The defects of made masts are thus discovered:—If for *decay*, the mast is generally bored with a very small auger, about three feet apart, or at the lower edge of each hoop, into the centre, boring them alternately athwartships and fore-and-aft. Search is also made in the place of the wedges at the different decks, and at the edges of the cheeks, &c. When fractures are discovered, to ascertain their extent, thick shavings are taken off, with a plane first, and if the *black* mark of the fracture still appears, take a chisel, and penetrate, by taking off small portions at a time, till the defect begins to disappear; then the depth of the incision will determine whether the mast, or that part of the mast where it takes place, ought to be condemned. If a Jacob's ladder, a chisel is made to pass between the shakes.

To discover the defects of a mast to the greatest certainty when it appears *weak*, without any *visible*

defect, it is common to take off the cheeks, drive the body-hoops off, and take out the aris pieces, to give an opportunity of examining the edges of the fore and after fish, and side trees. All masts, yards, &c., when properly examined, should have the paint or other substances taken off their surfaces, and planed all over, to shew the smallest defect.

LOCALITY OF FRACTURES.\*—“In *made* masts fractures mostly take place from the tail of the cheek to the deck, though frequently the mast becomes buckled from the middle of the cheek upwards; but this commonly takes place through improperly *staying* and setting-up the rigging, and at the *wedges*,† especially at the head of them,

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\* By reference to Mr. Fincham's valuable work on Ship-building, published in 1821, it will be seen that the paragraph 465, p.174, under the head of “Fractures,” is not sufficiently clear to be extracted verbatim. A liberty, therefore, has been taken with the original text.

† Doubtless the author of a work, recently published, on Rigging, under the title of the “NAVAL OFFICERS' GUIDE,” never perused the above passage when he so strongly *recommends staying* masts with the *wedges in*! “I feel satisfied,” he says, “that prejudice and custom will be much opposed to this, and many officers who have not been employed for years, and think *their own way best*, will not only condemn the plan, but all who approve of it; but a trial will always confirm what I have stated.”—p. 48.

Passing over the *perspicuity* of the latter sentence, the argument is thus answered. Officers who have not been on *shore* for years,

fractures are often found. In *single tree* masts without cheeks, springs are found most frequently at the lower part of the hounds and wedges. In top-masts, fractures mostly take place at the lower part of the hounds, and at the cap. *Bowsprits* are most generally discovered to be sprung on the upper part principally, and the sides between the gammoning and the chock or bend."

#### PROPORTIONS FOR MASTS AND YARDS.

THE following is the scale for the length and diameter of masts and yards, which, almost from time immemorial, has been established in the naval, as well as in the civil, service. It is now, however, in the contemplation of the present Surveyor of His Majesty's navy to establish a newly graduated system, the rules of which are not yet promulgated, though doubtless they will be found of the utmost utility. Some original and highly intelligent views of the

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and who are known to be seamen of equal experience with those authorities the writer so vauntingly cites, not only condemn the practice, as contrary to all mechanical principle, but would very properly "*charge*" the master with the damage done to a mast, by a procedure which can never receive the sanction of *common sense*.



subject have, in the mean while, been developed by Mr. H. Chatfield, of Plymouth Dock-yard, in his lately published elementary essay "On the Principles of Masting Ships," which may be consulted by the profession with much advantage.

#### LENGTH OF MASTS.

**MAIN-MAST.**—The length of the lower deck, and the extreme breadth of the ship added together, and divided by two, will give the length\* of the main-mast. For example, the length of the lower-deck of a seventy-four-gun ship is one hundred and seventy-six feet; the extreme breadth is forty-eight feet eight inches; added together, these numbers will give two hundred and twenty-four feet eight inches: the half of this number will be one hundred and twelve feet four inches, which is the required *length* of the main-mast. This being determined, the other masts bear the following proportions:—

**FORE-MAST**—Eight-ninths of the main-mast, which will be about ninety-nine feet and a half.

**THE MIZEN-MAST**—Of a first-rate, seven-eighths; ships from eighty to fifty guns, six-sevenths; and vessels from forty to twenty-eight guns, about five-sixths of the main-mast.† When the mizen-mast steps

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\* In brigs, the length of the main-mast is thus ascertained:—The depth in the hold is added to the length and breadth, and one-half is the length of the mast.

† In sloops, the mizen-mast is three-fourths of the main-mast.

on the lower-deck, the depth of the hold is to be deducted from the length here given.

**MAIN-TOP-MAST**—Three-fifths of the main-mast.

**FORE-TOP-MAST**—Eight-ninths of the main-top-mast.

**MIZEN-TOP-MAST\***—Three-fourths of main-top-mast.

**TOP-GALLANT-MAST†**—Half the length of top-mast.

**BOWSPRITS**—Of eighty-gun ships and upwards, are generally seven-elevenths of their main-masts. Bowsprits of seventy-four-gun ships and under, are proportioned to about three-fifths of their main-masts.

#### DIAMETER OF MASTS.

**MAIN AND FORE-MASTS OF SHIPS**—From one hundred-and-twenty to fifty guns inclusive, are generally one inch in diameter at the partners to every *yard* in length. From forty-six to the smallest class of frigates, are generally nine-tenths of an inch to every yard in length.

**MAIN-MASTS OF BRIGS**—One inch to every yard in length, and the fore-mast nine-tenths of the main-mast.

**MIZEN-MASTS OF SHIPS**—From first-rates to seventy-four's inclusive, three-fifths of the diameter of the main-mast. Fifty-gun ships and under, two-thirds of the diameter of the main-mast.

**MAIN AND FORE-TOP-MASTS**—One inch to every yard in length to the fore-top-mast.

\* In sloops, the mizen-top-mast is sometimes five-sevenths of the main-top-mast.

† With the exception of the eighteen-gun brig, whose top-gallant-mast in tauntness far exceeds this proportion.

**MIZEN-TOP-MAST**—Seven-tenths of the diameter of the main-top-mast.

**TOP-GALLANT-MAST**—One inch to every yard of their length.

**ROYAL-MASTS**—Two-thirds of the diameter of their top-gallant-mast.

**BOWSPRIT**—Of ships, from first-rates to seventy-four's inclusive, about two inches less than the diameter of the main-mast. In forty-six-gun ships and under, the diameter is about an inch and a half less than the main-mast.

**SEPPINGS'S LOWER-MAST**—Is composed of a number of square pieces, each side being one-fourth of the diameter of the mast for large ships, and one-third of the diameter for smaller vessels; these pieces are, in length, according to the length of the mast, and are placed end to end, according to the butts of the hoops.

The masts are formed to have both ends alike, to afford an opportunity, in case of defect or injury, by placing either end uppermost. Each end is, therefore, made to form the *head*, and of a length the same as the common mast-head. The exterior form of the body of these masts is cylindrical; the parts at each end to the length of the common mast-head, are formed with the angles only taken off, the same as the common heads.\*

#### LENGTH OF YARDS.

**MAIN-YARD**—Eight-ninths of the main-mast.

**FORE-YARD**—Seven-eighths of the main-yard.

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\* "Mast-making."

**CROSS-JACK-YARD**—Same as fore-top-sail and sprit-sail-yard.

**MAIN-TOP-SAIL-YARD**—Five-sevenths of the main-yard.

**FORE-TOP-SAIL-YARD**—Seven-eighths of the main-top-sail-yard.

**MIZEN-TOP-SAIL-YARD**—Two-thirds of the main-top-sail-yard.

**TOP-GALLANT-YARDS**—Of line-of-battle ships, are generally two-thirds of their top-sail-yards. In frigates this proportion is varied.

**ROYAL-YARDS**—About one-half of the top-sail-yards.

#### DIAMETER OF YARDS.\*

**MAIN AND FORE-YARDS**—At the slings, seven-tenths of an inch to every yard in length.

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\* The place of the given diameter of yards is at the slings; the yard-arm always bears a certain proportion to the slings, according to the nature of the yard; and the yard is quartered from the slings to the yard-arm, and which are distinguished thus,—first, second, third, and yard-arm. The proportion for the quarters are obtained by graduating them. Mast-makers effect this through the means of a marked batten, called the graduating batten.

Lower-yards are made of a single tree, or of two pieces scarphed together with a vertical scarph. The yard-arms, in both cases, are five-twelfths the diameter of the slings, when in a *single* piece; the yard is left in the eight squares, at the middle; the after one to half the length of the yard, and the others, which are for the sling cleats and battens, one-eighth the length of the yard. When the yard is formed of two *pieces*, there are no squares left, but the yard is formed to the round, and the battens hollowed. The scarph to the yard made of two pieces, is about one-third the given length, and from three feet six inches to four feet, with the butt-ends of

CROSS-JACK-YARD—Same diameter as fore-top-sail-yard.

TOP-SAIL-YARDS—Five-eighths of an inch to every yard in length.

TOP-GALLANT-YARDS—Six-tenths of an inch to every yard in length.

ROYAL-YARDS—Vary.

HINT.—The carpenter is recommended to provide himself with a mast-maker's rule, which contains fractional proportions of the different diameters of masts, &c., at their quarters, heads, and heels, as they bear to the given diameters at the partners. On the opposite side of the mast-maker's rule are also proportions for finding the lengths and diameters of all masts and yards, &c.

#### DIMENSIONS OF TOPS.

THE dimensions of tops are as follows:—Breadth athwartships, one-third the length of the top-mast; the length fore-and-aft, two-fifths of the breadth; but to obtain a greater spread to the top-mast-shrouds, tops

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the trees placed together. The lips of the scarphs are made about one inch and a half in thickness, and the scarph is formed straight up and down, to about one-sixth from each end, from which place it increases in round to the lip of the scarph, where it is the same round as the yard, in order that the breadth of the lips may not be too narrow. The scarph has one circular coake under each hoop as far as the surface is straight. The number and place of the hoops on the yard-arms is governed principally by the knots; the hoop nearest the sling is placed about one-seventh the yard out, &c.—Vide "*Fincham on Masts and Yards.*"

are frequently fanned,\* from one to two feet on the after part, since breadthening them aft does not affect the bracing of the yards. The whole of the top-mast square are made two-fifths of the breadth.

#### TRESSEL-TREES.

In length, they are one-quarter the length of the top-mast ; in depth, half the given diameter of the mast ; and in thickness, two-thirds of the depth.

#### CROSS-TREES.

In length, they are one-third the length of the top-mast, deducting six inches ; the breadth is as much as the tressel-trees are thick ; and the depth, two-thirds of the depth.

#### LOWER CAPS.

LOWER caps are mostly made of elm, and in breadth twice, and in thickness, five-sixths, the diameter of the top-mast. The hole for the top-mast is swept to once the diameter, three-quarters of an inch for the thickness of the leather, and one-eighth of an inch for play, and its fore-part is placed once the depth of the cap from the fore-end ; from the after part of this hole, to the fore-part of the square hole, is half the taper of the mast-head, and the thickness of the chock between the tressel-trees ; this hole is nine-tenths fore-and-aft, and eight-tenths athwart-ships of the size of the mast-head ; the fore-part and two sides of the hole are made three-quarters of an inch in a foot towards the upper part, on or from a perpendicular to their under-side,

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\* A technical phrase for winding.

or what is technically made to strengthen down three-quarters of an inch to a foot, and the after part is square, or made perpendicular through. The wood left beyond the after part of the square hole is equal to the depth of the cap; the four corners of the cap are rounded off to a circle, letting the ends and sides be a tangent to it, and the radius one-fifth the breadth of the cap.

The caps, when made of two pieces, are united at the middle, and have three circular coaks of three-and-half inches in diameter, one placed in the middle between the holes, and one at each end, about the middle between the holes and the extremities."\*

#### MAST-COATS—HOW MADE.

THE mast-coat, when properly cut and fitted in its fixed position, assumes the form of a cone. The material, of which this covering is usually composed, is canvas No. 1; though many officers prefer canvas No. 2. To ensure a close and compact encasement, it is advisable, before cutting the canvas, out of which the coat is to be made, to observe the following mode of admeasurement:—

Girth the mast round at eighteen inches above the deck. Girth also round the deck at three inches from

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\* Fincham.

the mast-hole. These girths give the circumference at top and bottom. The length is obtained by measuring straight the distance between the places girthed.

Divide the lower girths into an equal number of parts, suitably to the width of the canvas, allowing for the *seams*, which are one inch wide. The clothes must be gored upwards, to produce the circumference of the mast at the top-girth; and, when sewed together, cut with a sweep to set neatly round the mast. The upper part is then sewed into a double collar, six inches wide.



To find the quantity of canvas in a mast-coat, multiply the number of cloths by the length, and add the quantity in the collar :—

EXAMPLE :

Ft.	In.
1	8 length.
	4 number of cloths.
—	
6	8
3	0 feet in the collar.
—	
Total ....	9 8
—	

#### RUDDER-COAT—HOW MADE.

THE utility of this coat is to prevent the sea rushing into the ship through the rudder-hole abaft.



The coat is affixed to the rudder, and then encases the opening in the counter.

METHOD OF ADMEASUREMENT.

**GIRTH** the circumference of the rudder-hole ; then round the rudder and part of the stern-post about four feet below the counter. These girths give the width at top and bottom. The length is obtained by measuring the distance between the places encircled.

Divide the upper girths into an equal number of breadths, suitably to the canvas, allowing for the beams. The cloths are gored *downwards* with a small sweep, in order that the coat may bag, and not set too tight when finally fitted. The seams are one inch wide, and a two or three inch tabling is made all round.



To find the quantity of canvas in a rudder-coat, multiply the number of cloths by the length of the coat :—

EXAMPLE :

Ft.	In.	
4	9	length of the coat.
	6	number of cloths.
—		
Total ....	28	6 or nine-and-a-half yards.
—		

## SHIP-BUILDING.

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THE following outline of the art of ship-building has been abridged from a popular paper, which appears in the "Encyclopædia Americana." Those passages which are not in accordance with the principles and practice of British Naval Architecture, have been purposely omitted. Though inserted in this portion of the work, this article is especially intended for the perusal of the junior branches of the profession.

THE DRAUGHT.—"The nicest and most difficult operation in ship-building consists in forming the draught. This is usually effected, in Europe, by representing the form of the proposed ship in three distinct points of view. The first is called

the sheer plan, and gives a complete view of the side ; here are represented the length, depth, rake of the stem and stern ; the wales, water-lines, decks, ports, masts, and channels. The body-plan shews the breadth, having described upon it every timber composing the frame of the ship ; those running from the place of greatest breadth forwards being described on the right hand ; those running aft, on the left. Lastly, there is the half-breadth, or horizontal plan, shewing the whole as if seen from above. To construct these draughts is exceedingly intricate, and laborious ; and, when finished, they convey no very clear idea of the intended ship. American builders, and some of the best British builders, have a different mode, very easy and satisfactory. They begin by making a wooden model of the proposed construction, the thing itself in miniature. Here the length, breadth, bulk, all the dimensions, and most minute inflections of the whole, are seen at a single glance ; the eye of the architect considers, and re-considers, the adaptation of his model to the proposed object, dwells minutely on every part, and is thus able to correct the faults of his future ship at the mere expense of a few chips, and while yet in embryo.

“ In a ship of war, the great object is speed, connected, as far as may be, with ease of movements, and capacity to accommodate her crew, and carry a large supply of water and provisions. One point, moreover, is especially to be looked to ; this is, that the ship float sufficiently high above water to run no risk of receiving seas in her lower ports, in time of action. In order to be secure of this, the constructor must make an estimate of the whole weight of the ship, including body, spars, and armament, men and munitions ; and must so model the bottom, that it will have displaced an equal weight of water when arrived at the depth.

**BOW AND STERN.**—“ Among the admitted and well-established principles of construction is the leading one, that the greatest breadth must always be before the centre, and, consequently, the bow be more blunt than the stern. Some of the best builders place this point only one-third of the length from the stern. Abstractly, it would seem most important that the bow should be adapted to divide the water with the least possible resistance ; but, experience has proved that it is far more essential to facilitate the escape of the displaced water

along the side of the vessel ; for, when once a passage is opened for the ship, the fluid tends to reunite abaft the point of greatest breadth.

“ There is a further advantage in having the bow full towards the water-line,—that it may check her in descending into the waves, not abruptly, but gently,—pitching being the most dangerous, to hull and spars, of all a vessel’s movements. Though sharpness towards the stern-post is vitally essential to fast sailing, yet care must be taken to leave the buttock full towards the surface,\* in order to check the stern gently in descending, and, when scudding before a gale, to lift it in timely season, on the arrival of a sea. To hit the exact mean in this respect, so as not to retard the sailing, on the one hand, nor, on the other, to endanger the safety of the ship, requires all the skill of the architect. The midship-floor should be nearly flat, in order to render the ship buoyant and stable, or capable of bearing sail.

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\* Danish vessels are so formed. Fulness abaft contributes much towards easing a vessel at her anchors. The author served in the “Dannemark,” a Danish built ship of the line. She was an admirable roadster. In the North seas she has held at her anchors when other ships of the squadron have driven and parted, or have been compelled to slip their cables.

It has been suggested, that since stability is in proportion to the length, an elongation of ships might be productive of increased speed; but, though they would thus be enabled to carry more sail without an essential increase of resistance, yet, it may well be questioned, whether this advantage would not be more than compensated by the corresponding increase of difficulty in turning, manœuvring, and rising to escape the breakings of the sea. There must, also, be a less compactness and strength, proportionate to the increase of length, so that such vessels may be only adapted to the smoothness of a lake, or to the purposes of privateers, and smugglers, who are desirous to procure rapid movements, at whatever sacrifice. An increase of breadth may produce equal advantage, without any sacrifice; for, inasmuch as stability increases as the cubes of the breadth, by adding one-quarter to the breadth, you gain a double stability, and, by consequence, a capacity to bear twice as much sail, with but one-fourth of increase in the resistance.

“ Keeping these principles in view, the builder then proceeds to form the half-model of his pro-

posed ship, making it of the usual relative dimensions (a quarter of an inch to the foot). When satisfied with his performance, he takes asunder the horizontal sections of plank of which the block was originally formed, and he has before him all the water-lines in miniature. Having marked these on the floor of the moulding-loft, he has all the necessary data, and proceeds to draft the entire frame. This done, pine-moulds are formed of all the different parts, and the preparatory labours are complete. The scene now changes from the moulding-loft to the ship-yard, and the builder turns his attention to the materials.

“The timber being collected, the workmen, with each his mould, proceed to fashion the pieces of wood assigned them, a due regard being had to careful conversion, that no stick is hewn contrary to its grain so as to impair its strength, nor a larger one ever used than is necessary for the particular purpose; and, especially, that no bad, or even indifferent wood be put in an important place, whence it could be removed only with difficulty.

FRAMING.—“The frame being ready, it is thus put together. First, the blocks are placed in

the slip, and the keel laid upon them, the pieces being snugly scarfed together and bolted; the keel is also scarfed to the stem forward, and the sternpost aft, the apron being raised with the stem, and the transoms and fashion pieces with the stern, if the vessel be not large. In laying down the keel, great care must be taken to preserve its perpendicularity, for which purpose it is pinned with three nails on either side of the blocks; also in raising and propping the stem and stern, and every piece of the frame. It is only by extreme attention that the builder avoids producing a crooked ship—an artificial monster of by no means rare occurrence.

“ FLOOR-TIMBERS are now let into the keel, and every other one is there firmly bolted and rivetted; they are notches of trees, formed by the trunk and one of the branches. Hence, in order to have equal strength on both sides, the butts should be alternately placed to right and left. As the floor-timbers are the great connecting principles of the ship, to which they bear the same relation as the ribs to the body, too much care cannot be taken in selecting and securing them. The



dead wood which fills up the angles at the stem and stern being got in, the kelson is laid upon the floor-timbers, which let into it, until it rests upon the keel; its pieces are scarfed together, and to the stemson and sternson, which form its prolongation up the stem and stern. A bend usually consists, besides the floor-timbers, of four futtocks and one top-timber, on each side; the first, or lower futtock, descends to the keel, besides the floor-timbers to which it is either bolted or pinned with treenails; the heel of the second rests upon the head of the floor, and bolts to the side of the first; and so on up to the top timber. Towards the stem and stern, the timbers do not meet the keel at right angles, but are inclined respectively forward and aft, as well to economize timber, by adapting the sticks to the inclination of the curves, as to augment the strength of parts much exposed to shocks from waves, rocks, and icebergs. The different portions of the frame are thus raised to their places by sheers and tackles, and then carefully shored, and kept to the proper breadth by cross pales; ribands are also carried round the frame and bolted, and every precaution taken to

confine each separate part to its particular position. The frame, being now complete, is dubbed smoothly off within and out, preparatory to planking. Sometimes the frame is made completely solid, and caulked; in this case the interior covering of plank is dispensed with, excepting a few strengthening streaks. This method has many advantages; a little additional width to the timbers brings them in contact, when, besides their being naked and exposed to the air within, there is no space for the generation of those destructive gases which cause dry rot. In this case, salting, which makes a ship damp and unwholesome, is also avoided.

PLANKING.—“ Having advanced thus far in the construction, the next care is to proceed with the planking, which does not merely serve to exclude the water, but to protect, connect, and bind harmoniously together, and is quite as essential as the skin to the body. Though, apparently, the most simple part of this wonderful machine, it is yet very difficult. Just as, in draughting the frame, it is necessary to have in view all the ports and scuppers to be carried clear of the timbers, it is essential, in planking, to have a preconcerted plan of the

whole. The butts must not come near the scarfs of the keel, nor beside each other within or without, nor near the port-holes, nor opposite the pumps, lest the oakum be sucked out, but must be judiciously distributed, so as to impart equal strength to every portion. It is also one of the nicest arts of the builder, so to carry up his planking, as, with little waste, to keep his seams always fair with the water lines. When it is necessary to bend a plank at the bow or stern, it is heated by steam, and then forced into place with screws and levers. While this is going on, the beams are erected and pillared on the inside plankings; the knees, which are crotches of timber or iron, confine them to the sides; also, the transoms at the angles of the stern; in like manner, the breast-hooks hold the stem to the planking and cant timbers of the bow. All this being attended to, the decks, plank-sheer, and rails finished, pumps placed, the bits for securing the cable, the capstan, the catheads for suspending the anchors, hatchways, mast-holes, and a variety of other objects, which, though too many to enumerate, must by no means be forgotten—all being complete, the carpenter makes room for the caulker,

who carefully stops all the seams with oakum, and smears them with pitch. The scraper follows the caulker ; and, water having been pumped into the hold, to ascertain whether there is any leak, the bottom is ready to be sheathed, or coppered, to protect it from the worms.

**SHEATHING** “ consists simply in covering the bottom, with sheets of paper, soaked in hot pitch, being placed between. In sheathing with copper, paper or felt is also interposed. The plates overlap each other from bow to stern, to prevent their being stripped off by the continual shock of the passing water.

**LAUNCHING.**—This is the triumph of the builder. It is a nice operation, and is thus performed :—If there be no ways in the slip (which is always an inclined plane descending into the water), they are immediately prepared. Two parallel platforms of solid timber are laid, one on each side of the keel, at the distance of a few feet from it, and extending from the stem as far below the stern as can be reached at low water. In this position they are carefully and firmly blocked and supported through-

out their length. This double platform is called the ways. Upon it a second system of timber is loosely laid, and well greased between. The space from these last to the ship's bottom is every where filled with wedges of soft wood, fashioned to its curves. The whole is called the cradle. The extremities of the cradle at the bow and stern are bound tightly across the keel with chains or ropes, and it is further kept from spreading by stout mouldings, which overlap the outer edges of the ways. When the rising tide has reached well up the ways, the wedges are simultaneously driven on every side, and the ship is raised from the blocks on which she has hitherto rested, and made to repose entirely on the cradle. The shores are all removed except the two spars planted against the counters, and when the proper moment has arrived these are also knocked away. The vessel, now abandoned to her weight, and encouraged by the yielding of the grease, begins slowly falling on the inclined plane; her motion becomes at each moment more and more rapid; the ways smoke and ignite with the pressure and velocity of the moving mass, and in a twinkling the noble fabric is upon its destined element."

The limits of this work will not admit of any descriptive detail of the plans of Sir Rob. Seppings. His triangular system of connexion and diagonal framing, add considerably to the strength of vessels of war. But the greatest improvement introduced in naval architecture may be said to consist in what is technically termed the FILLING-IN of the timbers.

The openings between the ribs are filled in with slips of timber nearly to the height of the orlop, or lower tier of beams ; which being then caulked, and paid or pitched over, makes the frame from head to stern, and within a few feet of the greatest draught of water, one compact and water-tight mass of timber ; so that were any of the outer planking of the bottom to be knocked off, the ship would not only still keep afloat, but would be secured from sinking. In the old system the starting of a plank would be, and often has been, fatal.

The mode of filling in these openings between the frame, where the width of the space does not exceed three inches, is by driving in slices of wood cut wedge-like ; two of which being driven, one from the outside, the other from within, form the

parallel space of the opening, thereby bringing the parts into the closest contact. In the openings exceeding the width of three inches, the space is occupied by pieces corresponding with the openings, the fibre of such pieces being laid in the same direction as that of the frame timbers.

These fillings occasion no consumption of useful timber, as one-fourth of the produce of slab, and other offal now sold as fathom wood, would supply a sufficient quantity for the consumption of the whole navy.

“The advantages obtained by filling in\* the openings are these. To add to the strength and durability of the fabric; to preserve the health of the crew from the effects of the impure air arising from the filth which soon collects in these openings; to render the ship less liable to leakage, as well as to facilitate the stoppage of any leak; and, lastly, to increase, as it may be said, the thickness of the

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\* His Majesty ship “Orestes” struck upon a sunken rock on the coast of Portugal. By this accident *eighteen* feet of the main-keel, from the main-mast forwards, was knocked off, close up to the “garboard streak.” During a passage of eight days, to Spit-head, the ship made no more water than four *inches* per hour. Had the timbers of the “Orestes” not been “*filled in,*” the probability is, that the ship never would have reached a British port.

bottom from four or four-and-a-half (the usual thickness of the plank) to about sixteen inches, thereby lessening very considerably the danger to be apprehended from getting on shore, or foundering at sea. That it tends also to the durability of the ship, will be inferred from the following positions:—

“ 1st. That the openings in the old principle are, after a ship has had any considerable length of service, choked up in many parts with an accumulation of filth.

“ 2dly. That no free circulation of air can be obtained in those openings by any means.

“ 3dly. That timber being either freely exposed to, or excluded from the air, is equally preserved.

“ 4thly. That it has been found, on examining the frame and plank of old ships, that those parts (now filled in) generally decay sooner than the rest, viz. from the floor-heads in the midships, and from the dead-wood forward and abaft to the height of the orlop clamps.”



## BOATSWAIN.

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### PRELIMINARY REMARKS.

THIS officer holds a station, in the ship, of the greatest possible utility. His vigilance should be perpetually on the alert: nothing is beyond his jurisdiction. In all the other inferior officers the duties are defined, but with the boatswain it is otherwise,—his eyes should be everywhere.

He ought, for example, to be a thorough seaman and a good rigger;\* he should be active of limb, quick of sight, and ready in the exercise

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\* In the art of measuring, or, as it is technically termed, "Cutting Rigging," boatswains are sometimes found to be deficient.

of his mental faculties: but all these qualifications will fall short of their due effect, unless he be possessed of good temper, and be of sober habits.

## GENERAL DIRECTIONS.

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ALTHOUGH the boatswain is to consider himself a day-officer, he should bear in mind that, at night, he is subject to the call of the lieutenant-of-the-watch.

### TURNING THE HANDS UP.

‘IN turning the hands up,’ or calling the crew to the performance of any particular service, boatswains too often think it necessary to indulge in piercing pipes and drawling tones of superfluous length.\* Nor is the triple repetition of such pro-

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\* Boatswains have a singular propensity to demonstrate the soundness of their lungs, by their most endless protraction of a note on their piercing pipes. They should not be so anxious to supply the vocal deficiency of the sea-birds. This propensity, how-

tracted sounds likely to produce alacrity in the movements of the men. Upon such occasions the boatswain is recommended to confine himself to one short preparatory pipe, and to one smart commanding call.

### HAILING ALOFT.

IN well-regulated ships, boatswains are not permitted to encourage their wonted predilection for *hailing* aloft. The practice is invariably repressed by the officer in charge of the deck. Bluster betokens little of business, and boisterous words serve only to demonstrate the truth of the adage, "all *noise*, and *no work*."

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ever, is not the worst feature in their taste ; for when, at last, they utter the required summons, they give it forth in tones so drawling, that the *first* words may be forgotten before the last are pronounced. The boatswain, to be sure, is by some considered, *ex officio*, a musical character ; but it cannot be denied that he lays too much stress on his *overture*, and is moreover inconveniently addicted to what his tuneful brethren technically call "repeats." "A—l—l H—a—n—ds a—b—o—u—t S—h—i—p!" If this lengthy summons is to be preceded with a longer-winded whistle, and each pipe and phrase be three times repeated by the boatswain and his three or four *mates*, the ship may be on *shore* before the leader of the band can be convinced how dearly he has "paid for his whistle."

## STANDING, AND RUNNING RIGGING.

THE boatswain will not be permitted to make the slightest alteration in the standing or running rigging without the previous sanction of the master, or the senior lieutenant. To prevent mistake, upon aught of alteration, he is recommended to consult *both* authorities.

## WORKING UP JUNK—KNOTTING YARNS.

IN working-up junk the boatswain should be careful that every part of it be converted to all such purposes as may be ordered by the master or senior lieutenant. Nor are yarns to be drawn or knotted without the express permission of the latter officer.

POINTS, GASKETS, AND NIPPERS.—In addition to those in use, the boatswain should keep ready prepared for service a sufficient supply of points, gaskets, mats, plats, and particularly *nippers*.

MAKING ROPE.—He is to be attentive to the conduct of the rope-maker,—to see that he is diligent,—that the rope he makes be well turned out

of hand, and that the quantity correspond with the quantity of yarn issued for the purpose.

### INSPECTIONS.

**OF SAILS AND RIGGING.**—The boatswain will be required to inspect every morning the bent sails, the standing and running rigging,\* and report their state and condition to the officer-of-the-watch. Should repairs be needed, or new rope required to be rove, the master and senior-lieutenant are to be made acquainted with the circumstances.

**OF SHIP'S CHANNELS—BOATS ON THE BOOMS AND QUARTERS.**—This officer will be held responsible that the channels of the ship be kept perfectly clear, and that they be not lumbered with swabs, brooms, brushes, uncoiled towlines, or unbent buoy-ropes. He should also see that there be no lumber in the boats stowed on the booms, as well as those hoisted to the quarters.

**HALF-YEARLY—OF CHAIN-CABLE.**—The Official

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\* On these occasions the boatswain should see squared and secured the rattlings of the rigging low and aloft.

The "Naval Instructions" direct the boatswain "to take upon charge the rope that is so made."

instructions require a half-yearly survey to be held on the chain-cables. When the cables are found effective, the boatswain is cautioned to procure the "report of survey," in order that he may place it in his guard-book for the purpose of passing his annual accounts.

#### CLOTHES SUSPENDED ALOFT.

It not unfrequently happens, that, after the boatswain has made his report to the senior-lieutenant, or to the officer-of-the-watch, that "every thing is well and in order aloft," shirts, trousers and sometimes scrubbed hammocks are seen, from other ships, suspended before the heel of the top-mast, or in positions purposely sought to avoid the scrutinizing eye of the senior-lieutenant. Boatswains will do well to take the *hint*.

*Weight of the Boats of His Majesty's Ships and Vessels of War.*

Rate in Guns....	120	80	74	Razee 50	52	46	Razee Corvette 26	28	Corvette 18	Brig 18
Launch .....	Tons. Cwt. 5 8	Tons. Cwt. 5 2	Tons. Cwt. 5 2	Tons. Cwt. 5 2	Tons. Cwt. 4 3½	Tons. Cwt. 4 3½	Tons. Cwt. —	Tons. Cwt. —	Tons. Cwt. —	Tons. Cwt. —
Cutters .... {	2 No. 1 3	2 No. 1 3	2 No. 1 3	2 No. 1 2	2 No. 1 3	2 No. 1 3	2 No. 1 3	2 No. 1 3	2 No. 1 3	2 No. 1 3
Barge .... {	1 10	1 10	1 10	1 10	1 10	Commo- dore. 1 10	Cutter Gig. 0 14½	2 Cutter Gig. 1 6	0 8	0 8
Pinnace ....	1 10	1 10	1 10	1 10	1 5½	1 10	1 10	1 5½	1 5½	1 5½
Gig .....	...	...	...	0 10½	...	...	0 9½	...	...	...
Jolly Boat ..	0 9½	0 9½	0 9½	0 9½	0 9½	0 9½	...	0 9½	0 7½	0 7½
Total weight of the Boats }	10 0½	9 14½	9 14½	10 4½	8 11½	8 16½	3 17	3 15½	2 11½	2 11½
Weight of the Boats.										

(Abridged from "Edye's Naval Calculations.")



## FIRST COMMISSIONING.

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### SURVEY-BOOK—RIGGING-WARRANT.

As soon as the ship is commissioned, the boatswain should apply to the commanding-officer to procure for him the above books.—Vide “*Captain’s Clerk.*”

### RIGGING PARTIES.

BEFORE the boatswain proceeds with the rigging of the vessel, he should procure from the senior-lieutenant, a regular list of riggers for each department of the ship. For example, “party to clothe bowsprit”—ditto “to rig fore-mast and fore-yard”—ditto, “fore-top-mast and top-sail-yard”—ditto, “main-mast and main-yard,” &c.

These parties should never be broken off, nor should they ever be employed in the *hold*; when not at work on the rigging, the services of these parties may be turned over to assist the several "gangs" employed in fitting and pointing the sails.

TRANSPORTING LOWER RIGGING FROM THE DOCK-YARD.—As soon as it be desirable to rig the lower masts, the boatswain should be cautious in removing the lower rigging from the shore to the ship, and that the shrouds for each mast be placed in the lump, or lighter, in the same order in which they will be required to go aloft—that is, stays and swifters underneath all, shrouds in pairs, according to their number, and pendants uppermost. By this arrangement, the rigging need not be removed from the lighter until ready to place over the mast-head. The gauntlets are then readily overhauled into the vessel's hold, and are bent on to the shrouds as required.

The boatswain should consult the senior-lieutenant as to the time and tide for transporting the lump. The *morning* tide is always to be preferred.

PLACING LOWER-RIGGING OVER  
MAST-HEAD.

IN some ships, the bolsters, previously to parcelling, are considerably reduced, and after the pendant and first pair of shrouds are got over, an up-and-down tackle\* is hooked well up round both parts of the shrouds, and boused down in a perpendicular position, whilst the man at the mast-head beats down the eye of the rigging with a heavy commander. In placing the rigging at the mast-head, the boatswain should caution the people aloft, that the seizings of the eyes of the several shrouds are not made to ride, but that each pair of shrouds be placed in a position to insure that the seizings will gradually "quarter aft."

When the shrouds have been severally boused down in the perpendicular position, they may then be brought to the channels, and, if the dead-eyes be turned in, set up† on their proper laniards.

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\* The lower block of this tackle should be hooked somewhere about the bits, or bolt for the top-tackle-fall block.

† When the rigging is not turned in, some ships set it up temporarily by means of salvages, or small-tailed dead-eyes, similar

TURNING IN DEAD-EYES.—The propriety of turning-in the dead-eye with the “end down,” or, as it is generally termed, “cutter-stay-fashion,” appears yet to be a disputed point, even with seamen of the first experience. Opponents to the method of turning-in with the end *down*, denounce it as detrimental to the rope,—asserting that the shortness of the ‘*nip*’ produces chafe, and premature decay to the shroud. But instances can be cited to shew that when the dead-eye has been turned-in, in the usual way, with the *end* of the shroud *uppermost*, that the throat-seizings have “gone” and the dead-eyes have drawn. On the other hand, shrouds turned-in cutter-stay-fashion have, on the same occasions,\* held on, and the rope in no way damaged by the nip. The more this method is tried the more serviceable it will be found.

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to those fitted for stoppers in action. By this means the rigging is stretched before it is finally turned in. In small ships, this plan may be readily adopted. In large ships, from the size and thickness of the shrouds, this method is not so practicable.

\* It is a remarkable fact, that, in the heavy hurricane which the squadron of Sir Richard Strachan encountered in the late war, the *only* ships that did *not* snap the throat-seizings of the lower-rigging, draw dead-eyes, or carry away spars, were those that had had their rigging turned in, cutter-stay fashion.

## CLOTHING BOWSPRIT.

THE boatswain should ascertain from the senior lieutenant, whether the bowsprit is to be clothed in the customary manner, or after any particular fashion. This becomes a necessary inquiry, as captains are sometimes desirous of fitting the fore-stay-collars in a manner very different from that of the established form. Some ships fit the fore-stay collars "*butt sling*" fashion, with a thimble or heart on each side of the bowsprit, and through which the spring and standing stays are to reeve. This plan has been tried in ships of all classes, and is much approved of, from the facility it affords in the operation of shifting a jib-boom. In the usual mode it is somewhat difficult to shift a jib-boom, in consequence of the heel of the spar binding in the heart of the stay-collar.\*

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\* The method of forming the proposed collar is thus:—Make a salvagee-strap of small rope, equal to the strap of the established fore-stay collar; in one bight, seizing a heart or thimble, according to the size of the ship; the other bight lay on the top of the bowsprit, and pass the thimble part through it, from underneath up; heave it taut through, beating the bight on the bowsprit down as the other part is pulled up. When well taut and close down, clap a seizing round the bight, without the thimble. The fore-

**BOB-STAYS AND BOWSPRIT-SHROUDS.**— It is always desirable that the bob-stays be well parcelled and covered with leather\* in the wake of the cut-water. It is also recommended to pass as little service as possible on the bowsprit-shrouds.

The spun-yarn is apt to break and separate, and as this cannot be always repaired at sea, water lodges within the service, and consequently tends to rot the rope.

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stay may then be rove through the heart or thimble, and finally set up. The spring-stay collar is fitted in a similar manner. The thimble or heart in each collar should be so placed as to lay on the upper quarter on each side of the bowsprit. The straps to be placed in the same position where the established collars are usually lashed.

\* Little of leather is allowed for the purposes of stropping-blocks. To procure a ready supply of this article, it was the constant custom of a well-known first-lieutenant, celebrated for his love of leather, to adopt "ways and means" peculiarly his own. On every occasion when this officer "went his rounds" to inspect the order and condition of the different decks, it was always remarked that his manner manifested much of disappointment when he happened not to light upon a stray pair of boots; but to stumble upon a pair of "long shorts," was observed to be a source of infinite delight. No words were wasted; there was no hue-and-cry of "Lost, stolen, or strayed!"—the only sounds that fell upon the ear were, "Here, Mr. B." (meaning the boatswain,) "here's a capital haul of light leather,—*glorious kivers* for the parrels of the to'-gallant-yards."

## LOWER STAYS.

SHOULD the lower-stays be fitted each with a mouse, it will be much easier to place them over the rigging, before the tops are on. When the tops are secured to the cross-trees, the stays must be rove aloft.

Lower-stays fitted with *lashing-eyes* are, for manifest reasons, best suited to vessels-of-war.—For example, the fore and main-runners may be got up, boused forward, and the eye of the standing-stays unlashed aloft, and sent down upon deck to be turned in afresh, even when the top-gallant yards are across.

## TOPS AND HALF-TOPS.

MANY seamen affect to disapprove of “half-tops,”\* asserting that two halves can never be so well secured as one whole. This is mere prejudice; for practical purposes, a half-top must be always preferred.

FUTTOCK STAFFS.—In marking the position in

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\* Vide BOATSWAIN—“*Practical Hints.*”

which the futtock-staves are to be placed, care must be taken that on each side they be put at equal distances. The proportion for seizing the futtock-staff across the shrouds is the length of the lower part of the trestle-tree to the lower part of the hounds; this length should be marked on the aft and foremost shroud of the lower rigging. Should it, however, be required to *shorten* the futtock-shrouds, this mode of admeasurement must be proportionably reduced.

To assist the eye, and to attain the desired mark, the boatswain is recommended to place “catarpin fashion” a black batten across the shrouds, from side to side.

**FUTTOCK SHROUDS.**—In all vessels-of-war, the futtock-shrouds are too *long*. Ships whose lower-yards are slung high, and brace sharply up, have their futtock-shrouds considerably shorter than the established length.

**LOWER-LIFT BLOCKS.**—Lower-lifts, in ships of any size, are best fitted with double blocks. An iron plate is now bolted across the upper side of the lower cap. The plate presents the form of a crescent. In the hollow side towards the top-mast,



in each extremity of the crescent, an eye is turned, in which a thimble is inserted. In some ships, instead of the eyes being turned, and driven through the crescent and cap, two eye-bolts are secured underneath with a nut. By this method the lift-blocks are brought well forward; consequently the lifts are not so liable to bind, chafe, or injure the foremost shroud of the top-mast rigging.

#### GETTING IN LOWER-YARDS.

THE boatswain should consult with the senior lieutenant whether the lower-yards are to be fitted with jeer-blocks or not. In all rates exceeding the large razée corvette, it is recommended to fit, at least, *one* jeer-block to the lower yard. In ship-sloops and eight-and-twenty-gun frigates, jeer-blocks may be dispensed with. The jeer-block or blocks, however, should not be finally fitted to the yard before launched. A block to answer the purpose may be lashed before the yard leaves the mast-house, in order to facilitate its ascent across the gun-whale.

When the yard is launched and brought along-

side of the ship, it may be placed across the gun-whale by proceeding thus:—

Place empty casks on each side of the gang-way, or whatever will best answer the purpose, on which the yards can rest for rigging.

If a ship of the line or heavy frigate, let a hawser be rove through the outer sheave in the jeer-block aloft, then through the centre one attached to the block on the yard,—up again through the middle sheave in the block suspended from the lower mast-head. Clinch the end of the hawser round the yard, close to the block; stop the standing part of the hawser with three or four stops at equal distances along the upper yard-arm, commencing from the inner quarter. To the short mast-head pendant hook the fore and main tackles,\* and have two long luffs overhauled upon each gangway, ready to bouse the yard forward, clear of the mast. When ready for heaving up, the hawser may be brought to the capstan, and as the upper yard-arm rises clear of the gun-whale, the stops are cast off:

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\* If the main-mast; if the fore-mast, two luffs hooked from each side of the bowsprit, and overhauled aft, ready to hook to each quarter of the fore-yard.

The main-tackles are to be hooked in time to assist in taking the weight off the hawser.

Should there be no jeer-block lashed to the yard, a top-tackle pendant-block may be substituted, and the hawser rove singly instead of doubly. This is applicable only to smaller ships.

#### FITTING LOWER-YARDS.

CHAIN-SLINGS are now supplied; they are preferable to those formed of rope, and supersede the necessity of slinging the lower-yards, for action. The boatswain, however, is cautioned to parcel them well over, and cover them with green hide before they are clapped round the yard.

JACK-STAYS are fitted in various ways; they are sometimes formed of iron; but the common rope jack-stay will be found to answer every possible purpose. *Two* jack-stays are sometimes fitted, and perhaps, in climates where the courses have to be constantly reefed, the *second* jack-stay were better attached to the lower yards. The jack-stays will also serve to secure the stirrups of the foot-ropes. The stirrups should never be *nailed* to the

yard. The upper eye should be placed over the neck of the bolt through which the stoutest jack-stay is intended to be rove. The jack-stay then answers as a toggle to secure the stirrup to the yard.

LOWER TRUSSES.—Lower trusses are fitted in various ways; but the regular *rollers* fitted abaft the trestle-trees have long been disused. The favourite “fashion” appears to be, to lead the truss-fall through sheave-holes cut in the after extremities of the trestle-trees.

In the war time, lower trusses were frequently rove in a manner well calculated to support the yard, in the event of the *slings* being shot away in action. A large clump-block was lashed well up on each side, within the head of the lower-rigging, as far aft as possible. Each truss-pendent was then rove through the clump-block on its respective side and brought down upon deck. The pendants were cut long, and admitted the yards to lower a considerable distance; indeed, as far as requisite without turning out the truss-blocks.

YARD-TACKLE PENDENTS.—It has long been the custom to fit the yard-tackle-pendants with a strop

round the yard, so as to hook and unhook as occasion may require. On the propriety of this practice a difference of opinion prevails; many officers asserting that the yard-tackles can be traced up and hooked with equal expedition with the stays. Perhaps so; but the author, in two instances, witnessed the loss of two valuable lives in consequence of yard-tackle pendants not having been attached to the yards. At all events, in time of war, yard-tackle pendants should be fitted to the yards. When they are not attached to the yards, they should be placed, or rather coiled, in a sort of box fitted for the purpose in the fore and main channels. They are usually stowed in the boats on the booms, but boats should not be lumbered even by the geer by which they are to be *hoisted* out.

#### FIDDING SPARE TOP-MASTS.

BEFORE the top-masts which are selected to be rigged are finally fidded, the spare ones intended to be stowed on the booms should be swayed up, *tried* with their respective cross-trees, and their fids regularly entered.

In fidding top-masts, the masts are generally "*launched*" and allowed to land on their fids, totally regardless of the appearance of their *cross-trees* overhead. After the fid is entered and properly placed, the top-tackle falls should not be let go by "*the run*," but the fall eased-up handsomely by hand; the boatswain or his mate attending to the *thwartship* position of the cross-trees overhead, and to see that they are perfectly square, or, in other words, at right angles with the keel of the vessel. The captain of the top should previously attach a hand-spike to the heel of the mast, in order that it may act as a lever in moving the spar in the position the boatswain may direct. When the cross-trees are well squared, and the fid has received the weight of the mast, small wedges may be inserted in the fid hole to keep the top-mast cross-trees in their proper position. Unless top-mast cross-trees are at right angles with the vessel's keel, *top-gallant yards* never can be squared by the braces.

#### TOP-MAST AND BACK-STAYS.

THE boatswain should ascertain from the master, or senior lieutenant, whether the top-masts are to be

fitted with travelling back-stays, and whether those denominated breast back-stays are to be rove with runners abreast, or to be taken aft, and set up “*standing*.” The latter method appears to be much approved of, and is now becoming prevalent in the service. By this plan, the necessity of “bearing back-stays aft” is entirely avoided.

#### TOP-SAIL YARDS.

THE jack-stays (single), stirrups, &c. to be fitted after the manner of the lower-yards. The tye-blocks are now secured to the yards by means of iron straps; in some instances the

QUARTER-BLOCKS are also strapped with iron. This method is much to be recommended. In shifting-yards, there is no longer occasion to unreeve the top-sail clue-lines, and top-gallant sheets. When the quarter-blocks are strapped in the olden way, the above ropes, when shifting top-sail yards, of necessity require to be unrove.

TOP-SAIL LIFTS.—In large ships, the top-sail lifts are recommended to be rove double.

TOP-SAIL TYES.—Top-sail tyes are now rove sufficiently long to send the yards up and down

with; and when not wanted for that purpose, the surplus ends pertaining to the standing parts secured to the mast-head\* are stopped up and down the top-mast rigging. In shifting-yards, this method will be found to save much time and trouble. The surplus end will also answer to sling the top-sail yard with, when going into action.

#### FITTING AND POINTING SAILS.

WHEN the weather will not permit the people to work at the rigging, or that it be deemed expedient to allow the standing rigging to remain upon the stretch, advantage should be taken of such periods to employ as many hands as possible in pointing and fitting the sails.†

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\* In some ships a strop and thimble are fitted under the rigging for the purpose of reeving through the standing part of the top-sail tye, which is secured, breeching-fashion, by two strong seizings, and then stopped down the foremost shroud.

† The length of the points will, of course, depend upon the size of the ship. The usual rule to determine the length of the different reefs is, to allow an increase of six inches to each reef towards the close reef. In all reefs, with the exception of the last, the *after* legs of the points are the longest. In the last, or close reef, the *fore* legs have the greatest length. The boatswain should be careful that the points be all properly whipped, crossing the turns through the whipping with a needle and twine.

Should the captain decide that the clues of the top-sails and



It is also desirable that the square sails be pointed and fitted in the sail-loft. If, however, it should so happen, that other ships' crews hold priority of place in the loft, and there be not sufficient room for all 'parties' there to work, the boatswain should suggest to the senior lieutenant the propriety of obtaining permission from the captain of the ordinary, to fit the ship's sails on board the nearest vessel out of commission.

#### MATS FOR LANIARDS OF LOWER RIGGING.\*

THE boatswain is recommended to ascertain, as early as possible, whether there are any spare mats in store, which have been returned from ships put out of commission. It frequently happens that mats are *found* to fit with little or no alteration. Such mats can be procured on demand in lieu of

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courses are to be fitted with dog-and-bitch thimbles, (a method which cannot be too strongly recommended,) application should be made to the master sail-maker to alter such sails before leaving the loft, as, when fitted upon this principle, the clues of both top-sails and courses require to be considerably shortened.

\* These mats should be made sword-fashion, with shoulders and a laniard attached to the lower part, to confine them to the dead-eyes.

old junk. The time taken up in making mats is considerable; and few ships can put to sea with *proper* mats fitted for the laniards of the lower rigging.\*

#### SETTING UP RIGGING FOR A FULL DUE.

THE boatswain should be prepared with a proper portion of "luffs" fore and aft—lower pendants, ready lashed—fore and main tackles, toggled—runners and tackles, laid along for pulling up—new laniards, ready for reeving—seizings, marling-spikes, levers, mallets, grease, &c., distributed to the several parties employed about the rigging.

If it be required to square and turn in afresh the dead-eyes of the lower rigging, two competent seamen, with their respective attendants, should be stationed to each shroud. When the dead-eyes are squared, and the mast stayed, the shrouds should be pulled up in pairs.

It is also recommended to rack the laniards of the shrouds to the inner as well as the outer parts.

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\* For these mats the Americans substitute a small netting, which is placed from dead-eye to dead-eye, over the laniards of the rigging; the netting is made of the same sized rope as that of which the ship's splinter-netting is usually formed.

## RATTLING THE RIGGING.

THE rattling stuff should be well *stretched* before used, and the eyes of the rattlings spliced with neatness. In some ships the eyes of the rattlings are made “*artificial fashion.*” \*

Previously to rattling down, the boatswain is recommended to draw the “line of direction” for the inspection of the master and senior lieutenant. If the ship be in trim, it will be well to rattle the rigging by the line parallel to the vessel’s sit upon the water; if the ‘sit’ be not ascertained, the rigging may be rattled down by the horizontal line. The usual distance for the rattlings apart, is from fifteen to sixteen inches. When it is required to rattle quickly, three ends may be taken up at a time, and the men in the rigging may begin at three different places.

## TRANSPORTING ANCHORS FROM SHORE.

THE anchors should be so placed in the lump, or lighter, which is to convey them from the shore to

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\* Spliced with an “Artificial eye.”

the ship, that there will be no difficulty in "catting," or stowing them, when brought along-side. If the ship be at moorings apart from the hulk, the star-board anchors should be stowed in the lump, on the larboard side, and *vice versa*. But if the ship be along-side of the hulk, it may be necessary to pursue the opposite course. This will entirely depend upon the ship's position along-side of the hulk, and the relative length of each vessel.

## CABLES.

VIDE *Master*—"First Commissioning."

## NIPPERS, STOPPERS, &amp;c.

THE nippers, bit and deck-stoppers, and all the geer pertaining to the cables, should be made and fitted as early as possible. The superintendence of this service is assigned to the mate-of-the-main-deck.\*

## BLACKING THE RIGGING.

IN blacking the rigging, the first precaution that should be taken by the boatswain is, to cover, with

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\* VIDE *MATE-OF-THE-MAIN-DECK—First Commissioning.*

old canvas or hammocks, the lower-mast-heads, and particularly the caps.

The blacking should be put on *hot*. Coal Stockholm tar, with a certain portion of salt-water, boiled together, makes an admirable mixture for blacking the rigging. It is not recommended to blacken the royal and top-gallant rigging *aloft*. This rigging may be previously blackened, and traced up to dry between the tracing posts on the deck of the hulk.

#### HARBOUR GASKETS.\*

THESE gaskets should be platted out of hand, blackened, and traced up to dry with the top-gallant rigging. The broad part of the gasket should be made sufficiently long to secure the sail when furled with two reefs. In some ships they are made two-and-a-half inches wide. This may be a little too wide, but the broader the gasket the better the sail will appear.

Previously to clapping on the gaskets, each yard-

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\* Bunt gaskets are very properly "getting out of fashion." At best, they carry with them an unsightly appearance. Becketts would be found to answer every possible purpose.

arm should be divided into equal parts, according to the number\* of gaskets the senior lieutenant may require to be attached to the yard. Nothing looks worse, and yet nothing more frequently offends the sight, than sails furled and secured by gaskets placed at *unequal* distances.

#### TOP-GALLANT-MAST ROPES.

For expedition, the mast-rope rove upon the "*bight*" with "lizards" taken through the royal-sheave-hole, must be preferred to the old manner of fidding-masts, by the double operation of two mast-ropes, namely, the "long" and the "short." If *delay* be desired, or, in other words, people prefer going the *longest* way to work, the *short* mast-rope must be put in requisition. The mast-rope, however, rove upon the bight with lizards, is better calculated for harbour practice than for sea service. The mast-rope, which is here recommended as applicable to every purpose, may be fitted as follows:—"The rope is rove as usual,

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\* Gaskets are sometimes placed on the yard so as to cover every second seam of the sail: this will not be found to be a good rule. The above method is most to be recommended.



stopped to the top-gallant-mast-head and royal sheeve-hole, leaving a long end over the upper-stop, to hitch to the bolt,\* before cutting the stops. To prevent the rope slipping, rack both parts together above the sheeve-hole in the sheeve of the mast.”†

### STOWING BOOMS.

IN stowing-booms, care should be taken that the spare spars are hoisted *in board*,‡ with their extremities directed in the manner in which they are intended to be stowed on the skids. For example, main-top-mast, head *aft*; fore-top-mast, head *forward*. This practice will save much of time and trouble, in *winding* unwieldy spars, and will place the masts in the proper position for being sent aloft *upon trial*.

As soon as the manner of stowing the booms

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\* Lieutenant Martelli should have added the bolt in the cap.

† Martelli on “Rigging.”

‡ If the spar be too long to come in board between the fore and main-rigging, the stay tackles must be hooked crosswise,—that is, the fore-stay to the heel of the fore-top-mast, and the main-stay to the head of the same stick. By this means, when the mast is raised by the yard tackles even with the gun-wale, the stays hooked in opposite ways will always clear either extremity from the fore or main rigging.



be determined, that is, whether in *one* pile, amid-ships, or in *two* divisions on each side of the skids, the boatswain will proceed thus :—

IF IN TWO DIVISIONS—STARBOARD-PILE—Lay the main-top-mast, (head aft,) main-top-gallant-mast, mast-fish, one yard-arm-piece, jib-boom, and main-top-mast, studding-sail-booms, &c.

LARBOARD-PILE — Fore-top-mast, (head forward,)\* fore-top-gallant-mast, mast-fish, hand-mast, flying-jib-boom, and fore-top-mast studding-sail-booms.

The top-gallant-studding-booms, and small spars to fill up the different interstices, may be inserted on either side; but it is always recommended to round the stowage with spare swabs, or strands of unlaid junk.

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\* A distinguished officer, who is an excellent practical seaman, has, for years, stowed the fore-top-mast with the head aft. He tried the experiment of shifting the fore-top-mast, with other ships which had the heads stowed in the contrary way, and found that the frigate which had the head of the mast pointed aft, was first to complete this heavy operation. The heel of the top-mast was lifted by the "stays" over the night-heads, and boused forward by a fore-and-aft tackle from the bowsprit-cap. This method was found to be a quicker process than that of getting the heel of the mast over the gun-wale, or down the scuttle-cut in the deck of the forecastle.

Booms, to be well stowed, will occasionally require the aid of the hand-saw; indeed, the carpenter should be in attendance to take particular account, and label with paint the heel of each spar stowed in its respective pile. The latter precaution, in time of need, will save considerable trouble in seeking for the stick required.

In some ships the spare fishes are previously hollowed out to fit the fore-mast. If required for the main-mast, the gouging can be always enlarged. This method answers two purposes,—namely, a spar partly prepared to fish either lower mast, and a *bed* in which each spare top-mast can lie on the booms.

BOOMS AMID-SHIPS.— In stowing booms amidships, or on the centre of the skids, much will depend upon the vessel's form, or on the manner in which she carries her width upwards. In some ships considerable *room* is gained by the adoption of this plan. It becomes, however, a matter of nice admeasurement to place the stouter spars, especially if their extremities be found not to clear the funnel on the fore-castle, or that the space which should be left open in the vicinity of the main

hatchway be at all infringed by the head or heel of either top-mast.

TOP-MAST APART FROM THE PILE.—Spare top-masts are sometimes stowed *apart* from the general pile. On its respective side, each mast is lashed independently to the skids. The mast-fishes are placed next, standing on their sides. This plan is certainly not so symmetrical in appearance as either of the other two methods; but for *ready* service, the top-masts so stowed are much sooner shifted. The boats standing on the gang-ways will necessarily (if this plan be adopted) require their respective chocks to be higher, in order to clear the bilge from the round of the mast. Officers who pursue this system of stowing spare spars invariably place the spare top-sail-yards on the skids, instead of resting them on the goose-necks fitted to the channels.

#### REEVING RUNNING RIGGING.

IN reeving the running rigging,\* the boatswain is not recommended to *cut* and and reeve, but, on the

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\* It were much to be desired that the running rigging, previously to reeving, should be stretched at the capstan. The old

contrary, to *reeve* and cut. However correct the "RIGGING-WARRANT" may appear in *type*, there will be always found a difference of a few fathoms in *rope*; and it so happens that this difference invariably errs on the *wrong* side,† the allowance per *type* being sure to be *shorter* than the *measurement* per *rope*.

#### FORE AND MAIN BUNT-LINES.

THE bunt-lines of the courses are frequently found to jamb aloft, and, when rove on the bight and led

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practice of "taking the *end through* the coil" will, in some measure, relieve the rope of many of its kinks; but taking the mere turns out of a rope is not sufficient to facilitate its run through the block. Such ropes as top-sail-lifts, top-gallant-sheets, *after* braces, and jib and stay-sail halliards, should be all stretched before rove in their respective blocks. Moreover, if there be any time more than another that a vessel will require her ropes to run freely, it is upon the occasion of *first leaving* port, with a *raw and untrained crew*.

\* Old boatswains have been often seen to heave their hats upon the deck, scratch their hoary heads, look black, and mutter to themselves, upon discovering that they had cut a running-rope several fathoms short of the desired length. Such mistakes constantly occur, from the worthy "I warrant" trusting too often to recollected lengths of "*the last ship*," or relying too implicitly upon present returns of a printed table.

It was the constant rejoinder of a celebrated first-lieutenant, when the boatswain was wont to clinch every argument by the authority of "*the last ship*"—"Never mind the last ship. The last ship has left many a man in the *turch*."

forward, constantly become cable-laid. Bunt-lines will be found to lead fairer, and to haul the sails *higher* up, by fitting them after the following method:—

In the fore-part of the top, between the trestle-trees, cut two holes. Into these holes insert leaden pipes, back-stay-fall fashion. Hook to the foremost bolt on each side of the lower-cap a block, through which each buntline-leg is to be rove. Take each through the holes cut in the top, and pass them down before all to toggle to the foot of the sail. The hauling part to be led aft through lubber's hole and a block turned in at the proper distance, to allow the after leg to act the part of a pendant. Through this block a whip-purchase is rove. By this method the buntlines will be always kept clear, and they will be found, upon letting go the whips, to overhaul themselves.

In port, when the ship is moored, the buntline-blocks, with the ropes rove, may be unhooked from the bolts in the cap, and placed in the top, immediately over the holes through which the foremost legs are rove.

**TACKS AND SHEETS.**—The boatswain should

ascertain from the senior lieutenant, whether the captain contemplates any particular method of reeving and fitting the tacks of the courses. The tacks now supplied are tapered towards the running end; but tacks may be made to work with considerable facility by following the plan adopted by some *few* ships in the service. The method is simple, and the tacks, without unreeving, may be singled or doubled at pleasure. It is simply this: to the becket worked in the tapered end of the tack splice four or five fathoms of inch-and-a-half or two-inch rope, according to the size of the ship. This line is only to be considered in the light of a leading or overhauling line. Insert then, about two fathoms above the extremity of the standing part of the tack, a stout *lignum-vitæ* toggle, which is intended to prevent the standing part unreeving when cast off or disengaged from the cleat below. For example, suppose the main-sail be set with the usual double tack,—that there be light winds, and it be desirable to haul the sail up with the tack “*singled*.” At the word “Up main-sail!” the gunner’s mate previously lets go the hauling part of the tack, and then immediately disengages the

standing part, which is secured to a separate cleat. In a line-of-battle ship, this method may make a difference of ten or fifteen men upon the weather clue-garnet.

Again, suppose it be required to set the sail with a single tack, the hauling part of the tack is run on board, the toggle taking the block, until a certain strain is brought upon the rope, when the standing part of the tack, which is hanging downwards, is immediately secured to its own cleat, and the shell of the block relieved from the strain which the toggle would otherwise produce.

If it be required to set the sail with a *double* tack, the gunner's mate is only to haul down on the small leading line attached to the standing part of the tack, and to take a turn or two with it round the cleat intended to secure it. By this movement the tack is doubled in a few seconds. In ships of the line, the main-sail will stand best when the sheet is led in on the main-deck.

JIB-STAY AND JIB-HALLIARDS.—For various reasons, it is advisable to dispense with the cheek-blocks, which are usually fitted to the fore-top-mast-head, for the purpose of reeving the above

two ropes, together with the fore-top-mast-stay-sail halliards.

In the first place, if the fore-top-mast be sprung, or carried away in chase, and that it be required to *shift* the mast with all possible speed, considerable time is taken up in removing and replacing the cheek-blocks at the mast-head. But independently of these reasons, the stay and halliards\* should be rove under the mast-head, if only to keep them clear of the foot of the top-gallant sail.

#### REMOVING FROM THE HULK.

IN removing the stores, cordage, &c., from the hulk to the ship, the boatswain is recommended to procure a detached party, composed of a few steady seamen,—ten or fifteen hands will suffice; and when other duties will prevent the boatswain superintending this service in person, he should delegate the execution of it to the chief boatswain's-mate. He is also enjoined to follow the system recommended to the mate-of-the-lower-deck,—namely, to

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\* In some ships, the jib and fore-top-stay-sail halliards are rove through *gins* fitted for the purpose. Gins, however, are not supplied to His Majesty's ships.



perform this service by degrees, commencing two or three days prior to the period appointed for the "*general shift.*" \*

#### SHIPMENT OF SEA STORES.

WITH the exception of the spare messenger, stream-cable, and shroud-hawsers and cordage of this nature, it is not desirable to draw the sea-store-rope until the ship be hauled off from the hulk. Should there be no vacant buoys in the harbour, or from any other cause, the ship be compelled to remain lashed along-side of the hulk longer than customary, the boatswain is cautioned not to permit "drawn stores" to be placed in the hulk. This is double trouble, and the removal of stores to the ship is frequently attended with loss.

#### INDENTING.†

UPON this subject, the boatswain is referred to the article, under the same head, which will be found

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\* The boatswain, of course, will remind his yeoman of the necessity of taking an inventory of each article as stowed in the store-room.

† The indents and supply accounts must be carefully examined, in order to ascertain, before the ship leaves the port, that every

in the chapter dedicated to the Carpenter, at the conclusion of the article "First Commissioning." The observations there made are equally applicable to the boatswain.

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article inserted therein has been actually received; and it is to be understood, that if any of the boats, oars, or other stores allowed for *harbour* service, be taken to *sea*, the value of the same will be charged against the warrant-officer's pay.—*Naval Instructions*.

IN PORT.

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THE duties incidental to the boatswain in port will entirely depend upon the state and condition of the ship, and particularly upon the extent of the re-fit which the standing rigging may require.

Should there be any quantity of stores to return, or unrove-rope for survey, he should be careful that each article of cordage be made up in bights of five fathoms length.

## DOCK-YARD DUTY.

UPON every occasion that the boatswain is employed at the dock-yard, he should previously procure from the senior lieutenant a list of the party to be sent ashore. He should also consult with the

commissioned officer commanding the division, as to the different duties which, upon landing, may be deemed desirable to be *first* undertaken.

Boatswains are sometimes astray, and often undecided as to the particular service which should *first* be put into execution; they will take two hands here and three there, and scatter the people about the yard, without apprising the midshipman or lieutenant, in charge of the party, how such hands are employed. If it be necessary to distribute the people of the party (and it is always recommended, in the performance of dock-yard service, to assign divisional duties) the boatswain should procure a list of each sub-division appointed to execute any-particular task. By such system, he may visit consecutively the various lofts, and different store-houses, without seeking the officer in command, to “*give him a few hands*” for a certain service.

#### STOPPING UP GEER—FOOT ROPES, &c.

OF late years, it has become a prevalent practice in the service to stop in the running geer, and particularly the foot-ropes on the tops of the yards, as

soon as the sails are furled. Some officers are opposed to this practice, asserting that vessels-of-war, with geer stopped in, are not in readiness for immediate service. This, at first sight, would seem a reasonable objection ; but, if it were a general rule that the rigging was only to be *stopped in* when the ship was *moored*, no inconvenience could accrue to the service in consequence of pursuing a practice which must give to every vessel-of-war a light and symmetrical appearance. Nor is it necessary to *stop* the foot-ropes *up* to the yards. Indeed, they are better when *not* so stopped, because the topmen striding the yards, when executing this service, are liable, even with the greatest care, to ride *down* the sails. Foot-ropes may be *thrown* upon the *tops* of the yards, and made to look as snug and light as if they were secured by stops.

#### SQUARING YARDS.

SIMPLE as may seem the process of squaring yards, it, nevertheless, may be safely asserted that, now-a-days, there are *few* boatswains to be found competent to execute this service with any degree of precision. This does not so much proceed from

obliquity of vision, as from ignorance of the principle upon which yards should be squared. The boatswain generally proceeds thus :—He first bouses taut the lower-trusses, squares the yards by the braces, and, quite regardless of the distance of the topsail-yards off their respective caps, directs the chief boatswain's mate to take his station on the jib-boom end, whilst he himself proceeds in the boat a-head of the ship, to square the yards by the lifts.

Should the fore-yard require to be topped to starboard, the boatswain will top away upon that yard-arm, until by chance he discovers that he has topped it a *little too high*. To remedy this eyesore, he then sings out "Fore-yard to-port!" until he raises the larboard-yard-arm as high as that of the starboard, producing by this system of topping and never *settling*, a most unsightly *bow* in the yard. He then squares the fore-top-sail-yard by the *bowed\** fore-yard, and, of course, treats the fore-top-sail-

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\* Possibly, there is no professional practice which tends more to disfigure a vessel-of-war than that of bowing the yards. Moreover, it is seldom indicative of *sea service*. The *bow* borders upon the *guard*.

yard to a *bit of a bend*. He then takes the main-yard in hand, which, though probably perfectly square by the lifts, can no longer look so in *his eye*, because the yard-arms are not made to *cock up*, like those of the fore-yard. "Main-yard to starboard!" he sings out with an audible voice. The lift is stopped several feet to starboard, and then to port, till the yard assumes the desired *cock* the boatswain has in his eye.

In squaring the loftier yards by the lifts, boatswains seldom take the precaution of placing hands to attend the top-gallant braces. It should be remembered that the topping of the *lifts* alters and disturbs the squared position of the yard by the braces.

These may appear minute matters, but unless they be strictly observed, yards never can be properly squared.

HINTS.—Before squaring the yards; the boatswain is recommended to see that the masts, and particularly the lofty spars, are *upright* and "all in one." It frequently happens that after the boatswain has squared all the yards fore and aft, he detects an awkward inclination in one of the top-

gallant-masts ; he, nevertheless, returns on board—reports to the senior lieutenant, “yards square, ropes taut ;” but afterwards desires the captain of the top to “get a pull” of the starboard or larboard top-gallant breast-back-stay, forgetting that this very *pull* affects the top-gallant-lifts, and consequently alters the position of the yard.

#### STRIKING TOP-MASTS.

THE absence of forethought, or a little practical precaution on the part of the boatswain and petty officers, is sometimes the cause of this operation being one of no little labour. When the hands are turned-up to strike topmasts, the laniards of the after back-stays and top-mast rigging should be severally slacked, whilst the jib-stay, fore-top-mast-stay-sail, top-sail, halliards, top-sail-lifts, reef-tackles, and top-gallant-sheets, ought to be well overhauled. Steady hands should also be placed to attend the spring and the standing-stays. When blowing hard, head to wind, top-masts constantly bind in the cap, from the circumstance of letting go and overhauling too much of the stays.

Should there be any unusual strain on the top-



tackle-pendants, it were well to "stand fast" the falls for a few seconds, in order that the people aloft may examine the vicinity of the trestle-trees. The most minute rope jambed between the trestle-trees and the mast may produce sufficient strain to carry away the top-tackle-falls, if not the pendants. This precaution is more particularly directed during periods of striking top-masts in the dark. When the masts are struck, they should be kept on the right slue, and their heels securely lashed, in the event of the ship parting, or it becoming necessary to set close-reef top-sails with the mast down. The practice of sheep-shanking back-stays is not recommended. The back-stays may be set up through the medium of good luff-tackles, and by such means the mast may be rendered sufficiently secured to support the strain and pressure of a close-reefed top-sail.\*

#### SWAYING UP TOP-MASTS.

IN performing this heavy operation, every care should be taken to overhaul well, and to see that

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\* An interesting statement connected with this subject is appended at the end of the chapter, p. 287.

such of the standing and running rigging is perfectly clear which are calculated to impede the ascent of the masts. The topsail-lifts, topsail-tyes, reef-tackles, and jib and stay-sail halliards should be well overhauled alow and aloft, and the laniards of the top-mast rigging and back-stays be got ready for setting up the moment the mast is fidded and stayed. The fore-castle-men forward should have "luffs" led along the bowsprit, and tackles up and down the fore-mast, ready for staying the fore and main-top-mast.

No top-mast should be fidded by a single top-tackle pendent. It is true that small vessels\* are not allowed a second pendent, but such ships should reeve a hawser through the dead sheeve, for the purpose of acting the part of preventor in the event of the top-tackle-fall "parting."

The same precaution should be taken with respect to the position of the cross-trees *overhead* as

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\* Such ships should be prepared with stoppers fitted with two tails and a toggle, so as to clap on the top-tackle pendent about a foot *abaft* and *under* the top-block hooked to the cap. Top-masts ascend comparatively easy until the fid-hole becomes within six inches of the trestle-trees; then a heavy strain is brought upon the pendants, and particularly on the falls.

has been already mentioned under the head of "*Fidding Top-masts.*"

#### CLEARING HAWSE.

CLEARING hawse can seldom be attempted when the ship is riding by the "*clearing cable.*" But should circumstances render it necessary to attempt the operation at such a period, care must be taken that, by means of the fish-hook, the cables be lifted well out of the water, in order that they may be securely lashed, and that a strong hawser be bent *below* the lashing to the riding cable. This precaution is intended to act as a preventer in the event of the lashing "*giving.*" The hawser should be previously boused well taut, and secured before the cable be unbitted and boused through the hawse holes, by means of the bowlines.

#### UNMOORING.

It frequently occurs, in unmooring vessels-of-war, that the veering-cable is not sufficiently veered. In weighing the first anchor a considerable strain has been felt at the capstan, in consequence of the

ship not being permitted to bring the cable up and down. It is recommended "to veer three or four fathoms after the cable is *said* to be up and down. This can do no harm; it will put the whole strain of the ship on the anchor that is weighing, and thereby materially facilitate tripping it."

#### HOISTING IN BOATS.

THE origin of sprung lower-yards, or rather of *lower yards* 'found sprung,' may be frequently traced, as a professional writer remarks, "to the hoisting in and out of the launch." But perhaps this accident more often occurs in hoisting *out*, than *in*, the boat, in consequence of the sudden jerk which invariably attends the letting go of the yard-tackles when the boat reaches the water. In large ships, after bousing the fore and main trusses well taut, the lower-yards should be topped up to a small angle, and the lifts, top-sail-sheets, and burtons, all brought to bear an equal strain. The runners should be used as the principal purchases, the fore and main tackles employed as auxiliaries. Much time and trouble will be saved in clearing the fore-

top-mast back-stays if the fore-brace on the same side be well rounded in. Should, however, the length of the boat prevent her clearing the top-mast back-stays, hands should be previously placed to cast off their laniards during the period of securing the yards. Some officers affect to laugh at these precautions, but they will not laugh when the lower-yards are "*found sprung*" upon a *lee shore*.

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The following account is explanatory of the novel method employed in extricating His Majesty's ship "*Magnificent*" from an extremely perilous position, situated in the midst of rocks, with yards and top-masts struck, and on a lee shore of the enemy, on the 17th December, 1812:—

On the evening of the 16th of December, 1812, the "*Magnificent*," of seventy-four guns, being one of a squadron under the orders of Rear-Admiral Sir Philip Durham, was by that officer directed to take up a position and anchor between Chasseron and Isle of Rhe, in the neighbourhood of "*Basque Roads*." Previously to furling the sails, the sky being dark and cloudy, a reef was taken-in in the courses, and the top-sails were close-reefed. At 8<sup>h</sup> 30<sup>m</sup>, the wind increasing,

the top-gallant-yards were got down upon deck. At 8<sup>h</sup> 50<sup>m</sup>, "cable was veered" to a cable-and-a-half on the best bower-anchor, by which the ship was riding in sixteen fathoms water. At 9<sup>h</sup> 40<sup>m</sup>, it was discovered that the anchor had *broken*; the small bower was, therefore, let go, which brought the ship up in ten fathoms water. The yards and top-mast were immediately struck. The wind from S.W. continued to increase, accompanied by rain. The night was dark, but the lumination from the heavy *sea*, breaking on the Isle-of-Rhe reef (the length only of two cables from the ship), was sufficient to afford an awful view of her dangerous position. The best bower was now unspliced, and the inner cable bent to the spare anchor. The slack of the best bower was then hove in to about two-thirds of a cable, when the anchor or its stock, entangled by the rocks, assisted in holding the ship; it was, therefore, bitted and secured. The ship was now riding by the best and small bower anchors, with two-thirds of a cable on the former, and a cable-and-a-half on the latter, while the sheet, and spare anchors at the bows, were perfectly ready to let go at the shortest notice. A steady leadsman was placed in the larboard chains to get a cast of the lead every five minutes, and a careful quarter-master stood at the starboard gangway attending the deep-sea lead. The man in the chains soon discovered a large rock, rising three fathoms from the bottom, directly under him; and others were afterwards found, by the lead striking upon them, varying in height from one to two-and-a-half fathoms. This, situated as the ship was, so *near* to the reef, and *without* chain-cables, was a terrible discovery; for in

such a position, the hempen-cables could not possibly hold her many hours longer, more particularly as the rocks caused a most irregular cross sea, giving to the ship a violent jerking motion; so much so, that the oars were occasionally jerked out of the barge on the booms.

When every preparation had been made,—the officers and men in their respective stations, ready to act on the shortest notice,—the captain (Hays) placed himself in a chair at the larboard gangway, to watch the heaving of the hand lead. The intense anxiety kept up by the soundings, varying from one to three fathoms, may be imagined, but cannot be described. The gale, accompanied by rain, continued with unabated force, and the heavy sea breaking upon the reef astern produced frightful flashes, which, in the darkness of the night, rolling over the rocks, might have been likened to moving masses of liquid fire.

The day had scarcely dawned, when the quartermaster, attending to the deep-sea lead, declared the ship to be driving. The spare anchor was instantly let go, which providentially brought her up again; nevertheless, it was but too certain that the ship could not be held much longer by cables which had been chafing so many hours on sharp and rugged rocks. The wind was now at West. St. Marie Church, on Isle Rhe, bore East. The gale increased; but the favourable change in the wind was counterpoised by a strong lee current, and a heavy cross-sea on the off-shore bow. The sun had already reached the meridian, unaccompanied by any indication of a favourable change in the weather; and the captain, feeling it impossible to sustain through

another long night the intense anxiety of that of the preceding, thus addressed the French pilot:—"Pilot, can you save the ship?" "*By gare, no!*" was the desponding reply of the foreigner. Orders were then given to sway up the lower-yards to three-fourths of their *usual height*—to secure the top-mast close down, leaving the top-sail-yards to work in the caps—to pass the largest hawser through the starboard quarter port, and to bend it to the cable on the spare anchor, for the purpose of acting as a spring in canting the ship to port, previously to cutting the cables; but, at the instant of bending the hawser, the cable *parted*, and it was ultimately bent to the small bower cable.

The courses and top-sails were secured in three or four places, on their respective yards, with stops of spun-yarn, so as to be cut on the instant; the gaskets had been previously cast off; the head and main-yards were braced-up for the starboard tack, and the other yards kept square, dividing the men (who would otherwise have been required at the braces) between the fore tack, and fore and fore-top-sail-sheets.

It will be seen, that in the event of the spring casting the ship, the head-yards would require no alteration, and it would only be necessary to guard against setting their sails *too soon*. On the other hand, if the spring (which was every way probable) broke, the yards could not be better placed for producing the stern-board, which would, in that case, be necessary to clear the reef.

Whilst preparations were being made on board of the ship, the enemy was not idle on the land, but busily occupied in placing a number of horses and



carts along the coast, to carry off all that might prove worth taking from the *expected* wreck.

The captain now saw the necessity of making an appeal to the ship's company, and thus addressed the anxious crew :—

“ My men, you must, by this time, be sensible that our situation is one which calls for the utmost exertions of all ; it is, in fact, one of *life or death*. The orders you are about to receive of me are *new*, and may, perhaps, appear *extraordinary*. You must, nevertheless, execute them on the instant, without a moment's hesitation ; in which case, I trust in God, I may be able to bring the ship into a safe position in a few minutes after the cables are cut. On the other hand, should you unfortunately *hesitate*, or become unsteady, and keep fast sails ordered to be let fall, or let fall those directed to be kept fast, or, in short, not exert yourselves to the utmost in the execution of the orders you will receive, *life* cannot be ours beyond five minutes.”

After this address, the spring was hove in to a tolerable strain. The master was directed to attend at the bits, and see that the carpenters cut the cables the instant the word was given. All being ready, and the greater number of those on board being in the expectation of a watery grave, the cables were cut. The heavy sea on the larboard-bow acting against the spring, caused it to snap ; it was immediately cut by the axe, provided for that purpose, to prevent retarding the ship's stern-way ; the helm was put hard to starboard—the fore-stay-sail hoisted—the fore-top-sail let fall, and sheeted home—the fore-sail let fall—the tack hauled on board, and the sheet roused aft. All the sail

was flat aback, and *set in less than half a minute*. The ship's head paid round quickly towards the reef. When the wind became abaft the beam, the mizen-top-sail was let fall and sheeted home, and the helm shifted. When the wind came right aft, the main-top-sail was let fall, and sheeted home; the main-sail was next loosed, the tack hauled on board, the sheet roused aft, and the mizen-top-sail, cross-jack, and main-top-sail-yards braced up for the starboard tack. This canvas being set on the vessel, the captain exclaimed, "*The ship's saved!*"

This manœuvre, from the cutting of the spring till the requisite sails were set, did not exceed *two minutes*. At the moment that the ship's head was in the direction of the rocks, and then only in five fathoms water, the vessel made a desperate plunge, and in hauling to the wind the send of the sea did not leave, by the soundings, more than a single foot of water under the keel.

The ship was shortly afterwards safely anchored in Basque Roads.

## AT SEA.

## INSPECTIONS.

MORNING.—The boatswain will be required to inspect every morning, as early as possible, the state and condition of the sails, and of the standing and running rigging; and to report the result of his examination to the officer of the morning watch. He should be particularly careful to see that the rattlings of the rigging are properly secured, that the top-sail-sheets-service is not chafed, and that all the quarter and paunch-mats are properly placed.

EVENING.—The boatswain should inspect at evening quarters all the rigging-stoppers and ne-

cessary geer required upon the occasion of clearing for action, so that in the event of being surprised by an enemy at night, such geer may be placed at hand, ready for immediate use. He should also see that the toggles fitted to the lower and top-sail-braces be securely seized to their respective parts.

**INSPECTION OF BOATS.**—Every evening, after sun-set, the boatswain will be required to inspect the boats on the booms, to see that they be perfectly clear, and that their slings be severally hooked, in readiness for hoisting out.

In tropical climates, it is strongly recommended to uncover the boats after the sun has set, in order that they may benefit by the dew and air. Each cover should be made up and placed in the bow of the boat.

**INSPECTION OF STOWED ANCHORS.**—In boisterous weather, and particularly if the ship be labouring or lurching heavily, the boatswain should inspect the several anchors, and see that they be securely stowed. In small vessels, whose anchors in a heavy sea are constantly buried under water, it is neces-

sary to take the precaution of passing "preventer" stock and shank-lashings.

The quarter-boats should also be inspected, and the boatswain should report to the officer-of-the-watch the result of such inspection.

PERIODICAL INSPECTION OF SPARE SAILS.—It is highly essential to the preservation of the sails that those stowed in the *sail room* be occasionally inspected. Independently of the damage to which sails are subject by leaks and vermin, it is necessary that they be frequently brought upon deck, opened, and exposed to the air. This precaution is too seldom observed in His Majesty's service. The clearing of, and re-stowing, the sail room is too frequently regarded in the light of a troublesome task.

SETTING UP THE RIGGING.—Whenever it is required to set up the lower-rigging at sea, the top-mast-shrouds should be all let go. This practice is recommended upon the presumption that the lower-rigging will not be cast loose or set up on the occasion of a swell, or that the ship be rolling or pitching. It has been well observed, that by only letting go two top-mast-shrouds at a time,

an uneven strain has been brought upon the futtock-staves, which prevents the shrouds of the lower-rigging being equally drawn down.

Upon all occasions of setting-up the lower-rigging at sea, it is always advisable to have ready prepared as many "luffs" as possible, so that two shrouds may be set up at a time, and that there may be no delay in shifting the tackles from shroud to shroud.

When the lower-rigging is up, the futtock-plates should be beaten close down to the top, and the shrouds set tautly up by means of tackles ready hooked to their respective laniards. The method of employing the Spanish windlass, for the purpose of setting-up these shrouds, is not to be recommended: it occupies too much time, and often creates unnecessary delay before top-mast rigging can be set up.

In staying the top-mast, the boatswain is not recommended to bouse too far forward the heads of the masts; and he should recollect that the angle formed by the main-top-mast-stay with the fore-top is considerably greater than that of the fore-top-mast with the bowsprit, and, consequently,

that the lever of the former is more powerful, and less to be acted on by the back-stays than that of the latter.

#### PREVENTER BRACES.

WHEN the top-sails are *treble reefed*, the preventer-braces should be “clapped upon” the yards. —Vide *Officer-of-the-Watch*.

#### REEFING COURSES.

To execute this service with security, as well as celerity, the reef-earings should be formed of rope sufficiently strong to bear being boused *out* by the boom-jiggers. By this method, the inner turns of smaller rope may be passed with facility. The outer earing should be led through a block, or cheek, fitted for the purpose. This earing, it must be remembered, is not to be considered as a substitute for the reef-pendent. It should be also hooked, and hauled out by a separate tackle.

#### REEF-LINES TO THE TOP-SAILS.

Few ships in the service have their top-sails fitted with these *lines*. In some ships they are attached

to the points of the outer suit of sails. In reefing topsails, when blowing fresh, and particularly when steering a course, or going large, reef-lines assist materially to spill the sail, and to enable the men on the yards to get hold of the points, which are difficult to reach when the canvas is bellying to the breeze.

Reef-lines are thus fitted:—Take a piece of small rope, splice one end into an eyelet-hole in the head of the sail, seize it round the neck of one of the first reef-points on the fore side of the sail, in a straight line with the eyelet-hole, leaving enough slack to prevent the sail girting; then seize it to the under in the *second*, then the third reef; splice an eye in the end, and seize it to the neck of a *close-reef* point. In large ships there should be three reef-lines on each yard-arm; in small vessels, two will suffice.\*

#### SLACKING THE JIB-STAY IN BAD WEATHER.

“THE jib-stay is always set up like a harp-string; consequently, when it comes on to blow, both the

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\* Hauling on the lines.



spray of the sea and the rain tend to tauten it more. In pitching too, it must assist to spring the boom, work the bowsprit, and cause unnecessary strain upon the rope itself. Whenever it blows so fresh that the jib is not likely to be set, the jib-stay should be slacked.

“If it be required, subsequently, to set the sail, nothing can be easier than to set the stay up when the jib is loosing.”\*

#### TOP-GALLANT-MAST STRUCK.

WHEN top-gallant-masts are struck, care should be taken that a small mat be placed between the top-mast and the heel of the top-gallant-mast. Proper heel-lashings should also be fitted for the purpose of securing the heel of the latter.

#### CLEARING FOR ACTION.

THE boatswain should see that the rigging-stoppers be placed on the poop, quarter-deck, and fore-castle, abreast of their respective shrouds,—that the top-sail-sheets be severally stoppered,—the top-

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\* “Observations on Seamanship.”

sail-yards securely slung, and that preventer-braces be attached to the lower and top-sail-yards.

Should time permit of the precaution, the fore and main runners, fore and main tackles, and a proper proportion of stout luffs, should be bighted on the booms ready at hand, and whips ready rove to whip the runners up to their respective pendants. The mast-head pendants should be previously lashed abaft the mast. For the purpose of expedition (and on these occasions, as every second of time that can be saved is of the first moment) it is strongly recommended to fit the runners with stout salvagees and toggles. Compared to lashing, the method of toggling the runners becomes a mere momentary operation.

Some ships, previously to going into action, have lashed their runners, taken them forward, and set them up, and have also boused up their fore and main tackles on each side. The propriety of this practice becomes a matter of question, inasmuch as the runners and tackles are more likely to be shot away when aloft than when lying *low* bighted along upon the booms.

The boom-covers should also be taken off, and

all the minor lashings of the spare spars cast off. It may be necessary, even in the middle of an action, to have recourse to a spare spar to lash up and down a lower-mast.\*

A coil of stretched rope and a ball of spun yarn should be sent aloft and placed in each top.

#### PREPARATIONS FOR ENTERING PORT.

HINTS. — Official Papers—Make out Present-use demands—Remains of Stores—Demands to complete—Ditto, application for Survey, &c.

ROPES TO BE ROVE.—Long mast ropes, and top-tackle pendants. These only during the winter season.

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\* It is said that the pirate, Paul Jones, perceiving the main-mast of his ship totter in the middle of a severely contested action, whipt the spare jib-boom up and down the mast, converting it into a fish, and securing the two spars together by means of long nippers passed on the bight, and hove taut by hand-spikes, Spanish windlass fashion.

## PRACTICAL HINTS.

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TO SHIFT A BOWSPRIT BY THE SPARS  
OF THE SHIP.

A VARIETY of opinions prevail as to the most secure and practicable mode of shifting a bowsprit ; many officers prefer the plan of converting the fore-yard into the form of a derrick. Doubtless this process is pursued upon the principle of saving time and trouble, but experience will teach the admirers of this method that the practice is founded in error. To form a derrick of the fore-yard, it becomes necessary to dip the under yard-arm *within* the lower rigging, an operation in itself attended with no little trouble. Moreover, to

obtain a sufficient length of derrick to get in or out a battle-ship's bowsprit, it will be requisite to lash the *yard* to the mast, in a position approaching the under extremity of the yard, which cannot be deemed of sufficient *strength* to bear the strain\* produced by the weight of the bowsprit. The bowsprit of a brig or of a ship-sloop may be shifted by means of the fore-yard; but for a frigate, or ship of the line, it is recommended to have recourse to either of the following methods:—

DERRICK FORMED OF FORE-TOP-MAST. — As the fore-top-mast should always be *struck* preparatory to shifting a bowsprit, a secure and serviceable derrick may be formed of this spar, after the following method:—Lash a top-block close above the hounds of the top-mast; through this block reeve a stout hawser, securing the stand-

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\* An intelligent officer, and one of the first seamen in His Majesty's service, thus writes to the author:—" I decidedly agree with you ; the fore-yard should never be used for the purpose of shifting the bowsprit. Experience supports this opinion, as I have, on board of two large frigates, witnessed the springing of the fore-yard of each ship in attempting the operation. In the second instance, (in 1818,) the accident delayed for several days the sailing from the Brazils of a convoy consisting of 300 sail. Need I say more ?"

ing part to the fore-mast-head, and reeving the running part through another block lashed to the lower mast-head. This hawser is intended to act as a top-and-lift, by which the derrick may be raised or depressed according to the *angle* required for lifting the bowsprit clear of the bows of the ship. When the upper purchase-blocks are lashed to the top-mast-head, the *heel* of the derrick secured below, and its *angular* position obtained, the *messenger*, which should previously be taken up abaft the fore-mast, and passed over *through* the vacant hole in the fore-cap to the top-mast-head, must be boused well taut upon deck. The messenger should be passed through a large heart or thimble, so as to act as a fair leader in taking the strain off the top-mast-head, and throwing it more upon the head of the lower-mast. Perhaps employing the messenger, upon the same principle that a top-tackle-pendent is rove through the lower-yard for getting in the lower-deck guns, will be found to answer best. In this case, the voyol-block may be lashed to the hounds of the top-mast, so as to take the messenger, and act the part of the fair leader. The main purchase is

then lashed to the eye of the messenger. But it will be always safest to lash the purchase to the *head* of this spar.

**SHEERS FORMED BY TWO TOP-MASTS.**—This method, though perhaps causing a little more trouble, in consequence of having to clear the step of the bowsprit of *two* sticks instead of one, will nevertheless, in large ships, be found to be the safest mode of shifting so heavy a spar as that of a bowsprit of a ship of the line.

To rig the sheers, proceed thus:—take the fore and main-top-masts, and lash together their heads aloft. Upon each mast-head lash a top-block, through which reeve two stout hawsers, to answer the purpose of top-and-lifts, led double to the lower mast head. Take the messenger (as in the preceding method) through the top-mast-hole in the lower-cap, and secure it to the sheer's-head. The heel of each top-mast should be previously placed on "strong backs," or stout pieces of plank, each of which should rest, if possible, on the beams of the fore-castle-deck. The beams underneath should be well shored up on the different decks. As soon as the sheers are drooped to the required angle, the

heel of each top-mast should be well secured by stout lashings passed between two ports, or round the timber-heads in the bulwarks of the fore-castle; the messenger and top-and-lifts to be well secured upon deck. The main-purchase-block, in this instance, is to be lashed by a stout lashing to the sheer's head.

CAUTION.—In getting in the bowsprit, care must be taken that the main-purchase be overhauled down *abaft* the bumpkin; for should the purchase fall be passed before and *under* the bumpkin, it would be impossible to lift the bowsprit *higher*. The spar must necessarily be lowered again into the water; the purchase untoggled and shifted *abaft* the bumpkin, and, in fact, all the work must be done over again.\*

#### RAISING SHEERS FOR LOWER-MASTS.

It sometimes happens that a vessel-of-war upon a foreign station, is compelled to "raise sheers"

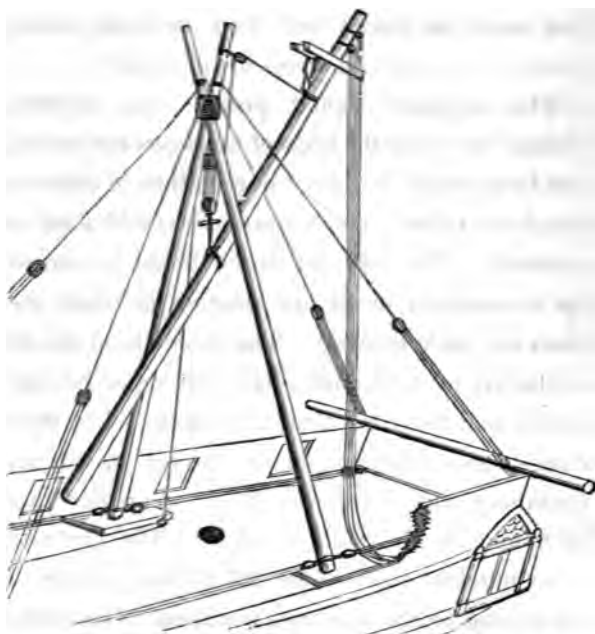
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\* This double trouble, through the obstinacy of a *directing* party, occurred some few years since, on board a frigate moored in Plymouth sound. The principal *director* was fully warned of the impossibility of his mode of proceeding, but, considering *suggestion* synonymous with *dictation*, he thought proper to persist in error until error left him in the lurch.





**RAISING THE MIXEN-MAST BY MEANS OF SHEERS ERECTED  
ON BOARD THE SHIP.**



from the deck of the ship, for the purpose of getting in her lower-masts.

As soon as the spars have been got in upon deck, (whether par-buckled in board, or lifted by means of the cat-fall, or tackles from the boat's davits,) they should be placed with their heads aft, resting upon a stout spar laid across the gunwale.\*

The carpenter should prepare the requisite "shoes" on which the heels of the sheers are to rest, and holes should be bored in each shoe in order to attach the tail of a tackle-purchase to shift them as required. The different decks should be shored up immediately under the position in which the shoes are made to stand. The sheer's-head should be lashed by three-and-a-half-inch rope, passing eleven, and never less than nine turns. The purchase-blocks should then be lashed round all, beginning with the lower block, or rather that pertaining to the *main purchase*. The upper or lesser purchase-block to be lashed last, and above the lashing of the principal purchase. Gauntlets, rove through tail-blocks, should be attached to the sheer's-head, and two stout hawsers, each middled,

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\* Vide Sketch.

and clove-hitched round the head of each spar; one of these sheer-head guys to be taken forward and aft upon each side. About the centre of each spar, lash two single blocks, one to be placed on the fore, and the other on the after part of each spar. Through these blocks reeve a separate hawser, which will serve the purpose of belly-guys, and which, like the sheer-head guys, are to be taken forward and aft on their respective sides. Four deck-tackles and large luffs are then prepared for the purpose of heel-tackles, two forward, and two aft, on each side of the ship.

RAISING THE SHEERS.—If the mizen-mast\* be the first mast to be hove in, the heels of the sheers, after placing them in their respective shoes in the position desired on the deck, are to be securely lashed. Overhaul then the main-purchase as far forward as the fore-bits; to the bits lash the lower block of the main-purchase, and, in the same vicinity, secure a leading block, through which the main-purchase fall is to reeve and lead aft. Bring then the fall to the capstan, and heave round,

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\* Whatever mast has to be hove in, the heels of the sheers must be lashed, and the shoes and shores secured as above.

hands at the same time attending the fore-and-aft guys, and looking out for the heel-lashings of the sheers, as the angle they form with the purchase gradually increases, and the spars approach to the desired perpendicular position. When the sheers are erect, the mast-head and belly-guys are to be boused well taut, the main-purchase cast off from the fore-bits, and rounded aft, retaining sufficient length to reach the mizen-mast floating alongside.

CAUTION.—Care must be taken that the sheers be placed *before* the hole for the mast, when the mizen-mast is to be first\* taken in. The same precaution is also to be observed when placing the position of the spars for the main-mast. The position in which the sheers should stand for the fore-mast is the reverse; in other words, the sheers should stand *abaft* the hole in the deck.

#### GAMMONING THE BOWSPRIT.

It sometimes becomes necessary to gammon the bowsprit by the means of purchases led and worked

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\* This is to admit the sheers to be "walked forward;" were they to stand *abaft* the main-mast, or even the mizen-mast, they could not be brought forward to clear the stick standing in the step.

on board the vessel.\* When this is the case, the method pursued is as follows :—

Tar well the saddle of the bowsprit, also the hole in the cut-water, through which the gammoning-turns are to pass. Take a well-stretched, or rather a half-worn rope, suited to the vessel's size; pass the end over the bowsprit, and clinch it to its own part, reeving it then through the cut-water, and passing it over the bowsprit. Attach a stout strop to one of the bob-stay-holes in the cut-water; to this strop hook a snatch block, of sufficient size to take the gammoning. Lay along the main, middle, or lower deck a stout luff or deck-tackle; hook the after block to a ring-bolt in the vicinity of the capstan, passing three turns of the fall round the whelps; snatch the gammoning into the snatch-block, hooked to the stern; pass it through the hawse-hole and toggle it to the foremost block of the deck-tackle led to the capstan.

Sometimes, and with much propriety, a pendent is sent from in-board, through the hawse-hole, and toggled to the gammoning without. This method

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\* Bowsprits of ships of the line are secured by two gammonings, all other ships by one.

obviates the necessity of passing the gammoning through the hawse-hole every time a turn is taken.

When the gammoning is regularly hooked, or toggled to the deck-tackle, heave round the capstan with a steady step. When well taut, wedge the turn of the gammoning in the cut-water, racking\* it immediately with stout spun-yarn to its next part; walk back the purchase, untoggle and pass the next turn over the bowsprit, and *inside* the turn already passed; snatch again the gammoning, toggle, heave round again, and so continue until sufficient turns† are passed to complete the outer gammoning. A half hitch is taken with the end round all; heave well taut, pass several turns, seizing them severally to the next part. These are called the frapping turns.

#### EXPECTATION OF LOSING LOWER-MAST.

SHOULD a lower-mast be badly sprung, wounded in action, or there be any other reason to appre-

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\* The rackings should not be passed on those parts of the rope which have been greased; nor should the rackings be allowed to remain on after the bowsprit has been gammoned. By taking them off, the turns render alike, and an equal strain is brought upon each.

† The foremost turns on the bowsprit form the aftermost in the cut-water.

hend its falling over the side, a *hawser* should be rove *through* the laniards of the lower-rigging on each side, and brought in-board and thoroughly secured. If the sprung spar be the main-mast, the hawser should be taken out of the foremost part of the quarter-deck, and brought in through one of the aftermost in the vicinity of the after-swifters. By this precaution, should the spar fall over either side, the laniards may be immediately disengaged from the channels. If this precaution be not taken, when the mast goes over the side, the outer-batten or ledge which confines the chain plates will be torn off, when the batten falling in the water will preclude the possibility, in that position, of cutting or disengaging the laniards of the rigging. It is of the first moment to disengage the rigging from the wreck, as the thumping of the latter against the counter, stern-post, or rudder, may cause irreparable damage,—possibly the *loss* of the rudder.

#### TOP-MAST CARRIED AWAY.

IF it be blowing hard, and there be a heavy sea running, the first consideration should be to relieve the *head* of the lower-mast from the weight of the



wreck. No time should be lost in hooking the two top-tackle blocks, and reeving on each side a hawser through each block; the stoutest hawser to be rove through the *lee*-block, and passed round the body of the wreck, in order to get the rigging of it in board;\* whilst the weather-hawser should be employed to unfid the stump, and send it down upon deck. To disentangle the rigging of the wreck, the laniards of the lee as well as the weather top-mast shrouds should be severally cut, previously securing the dead-eyes on each side of the rigging by a pair of top-mast studding-sail halliards. The fore and main tackles should be instantly got up and lashed to their respective pendants for the purpose of being hooked to the wreck, and to

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\* In the French service, the wreck and rigging are immediately cut away, their ships being invariably supplied with spare "gangs" of top-mast rigging, ready fitted for each mast. Upon the occasion of a British naval officer canvassing the propriety of this practice, with a captain in the French service, who professed to be perfectly conversant with the *power* of English proverbs, the Frenchman thus concluded his argument:—"De fact is, we have not de notion to lose de *shipe* for de penny-worth of de *peeck*,"—Anglice, no notion "to lose the sheep for the ha'p'orth of tar." But the drift of the foreigner's application of the proverb was simply this:—as the French were wont in the war to be the retreating party, the practice of "expending" the *spar* and rigging was deemed preferable to the chance of capture.

assist in taking the strain off the hawser led through the lee-top block. If the main-top-mast be over the side, the lee fore-top-sail halliards, unhooked from the bolt in the fore-channels, and overhauled aft, will be found a ready auxiliary purchase in lifting in-board the wreck, or rigging.

#### JIB-BOOM CARRIED AWAY.

SHOULD the jib-boom be carried away, whether the accident be caused from press of sail or the pitching of the ship, the fore-top-gallant-yard and mast should be immediately *struck*. The fore-stay-sail-halliards, if rove—if not, those of the fore-top-mast stay-sail—should be instantly unbent from the head of the sail, and be secured timber-hitch fashion round that part of the wreck nearest at hand. When made fast to the wreck, the stay-sail halliards should be set well taut, and the jib-sheets at the same time brought amid-ships on the deck, and hauled well in upon the forecastle.

The lee fore-buntline,\* untoggled from the foot of the sail, will be found to answer as a ready-rove

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\* In addition to the lee fore-buntline, the running part of the fore bowline will also serve as a ready-rove whip to assist in raising the wreck.

whip to assist in lifting the wreck from beneath the bows. The jib-stay should be immediately disengaged from the sail; the traveller secured, and stopped at the bowsprit-cap, ready to put over the new boom when pointed; and the jib, if not split, should be hauled aft upon the quarter-deck, and made up afresh, ready for re-bending. If the luff of the sail be fitted with a lacing, the several stops should be examined before the sail is made up. Should the jib be split, no time should be lost in getting the spare sail up from the sail-room. Whilst the fore-castle men of the watch upon deck are occupied on the bowsprit, clearing the wreck, the fore and main-top-men of the same watch may be casting adrift the spars on the skids, and preparing the spare boom for pointing. The inner and outer parts of the broken boom should be brought in-board on the opposite side to that from which the spare spar is taken.

When the new-boom is out, and the heel-rope well secured, the boatswain should be cautious that the martingale, guys, and back-ropes be severally well set up, and that the *standing* guys on either side are brought to bear an *equal* strain.

Whilst reeving the stay through the lacings of the jib, the fore-top-gallant-mast may be fiddled, and the yard crossed.

#### PARREL OF A TOP-SAIL YARD CARRIED AWAY.

TOP-MASTS, before now, have been known to go over the side, in consequence of the parrel of the top-sail yard suddenly giving way. Even with the top-sail close reefed, the *going* of the parrel has been the cause of losing the mast. When the parrel goes while blowing hard, the whole weight of the yard and sail is immediately brought upon the top-sail lifts, and the probability is, that, with the first heavy lurch, the top-mast goes over the side.\* The moment it is discovered that the parrel is carried away, the yard should be instantly clued down, the weather-brace well rounded in, and a pair of stout

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\* When serving as lieutenant in an eight-and-thirty-gun frigate, the author witnessed a similar case. In consequence of the parrel of the main-top-sail-yard going, with a close-reefed sail set, the top-mast went over the side. It was blowing at the time a heavy gale of wind; and it was impossible, from the heavy sea that was running, to cast loose the booms, or send the spare top-mast aloft, for some twenty-four hours subsequently to the accident occurring.

butt-slings promptly sent aloft as a substitute for the parted parrel.

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The Table on the next page may be found useful on occasions where doubts arise as to the weight and stowage of cordage which the boats of a ship may conveniently carry.

## WEIGHTS OF CORDAGE.

Inches	CABLES.	Cwt. qrs. lbs.	Inches.	HAWSER LAID.	Cwt. qrs. lbs.
24	{ 1 fathom }	1 1 4	3	{ 130 fathoms }	2 3 20
22	... ..	1 0 9	2½	... ..	2 0 5
20	... ..	0 3 16	2	... ..	1 1 6
19	... ..	0 3 6	1½	... ..	0 3 13
17	... ..	0 2 16	1	... ..	0 1 20
16	... ..	0 2 8	¾	... ..	0 1 4
15	... ..	0 1 27			
14	100 fathoms	41 2 20		CABLETS.	
13½	... ..	38 3 1	9½	{ 120 fathoms }	22 2 9
13	... ..	35 3 9	9	... ..	20 1 17
12½	... ..	32 3 17	8½	... ..	18 0 26
11½	... ..	30 1 10	8	... ..	16 0 6
11	... ..	25 5 10	7½	... ..	13 3 16
10½	... ..	23 1 17	7	... ..	12 0 18
10	... ..	21 0 3	6½	... ..	10 1 19
	HAWSER LAID.		6	... ..	9 0 12
6½	{ 130 fathoms }	13 1 11	5½	... ..	7 3 7
6	{ to weigh }	11 1 13	5	... ..	6 2 1
5½	... ..	9 2 2	4½	... ..	5 0 23
5	... ..	7 3 19	4	... ..	4 0 18
4½	... ..	6 1 22	3½	... ..	3 1 22
4	... ..	5 0 14	3	... ..	2 2 11
3½	... ..	3 3 7	2½	... ..	1 3 0
			2	... ..	1 1 4

Table shewing the Weight of 100 fathoms of Cable-laid Rope, from 2 to 26 inches.

Size.	Threads.	Weight.	Chain.	Size.	Threads.	Weight.	Chain.	Size.	Threads.	Weight.	Chain.
2	27	Cwt. qrs. lbs. 3 26		10½	576	Cwt. qrs. lbs. 21 0 19	1	19	1881	Cwt. qrs. lbs. 69 0 17	1½
2½	36	1 1 8		11	630	23 0 18	1½	19½	1960	72 3 4	
3	54	1 8 25		11½	684	25 0 15	1¾	20	2088	76 3 1	
3½	72	2 2 16		12	747	27 1 23	1¾	20½	2187	80 1 16	
4	99	3 1 6		12½	810	29 3 3	2	21	2295	84 1 14	2
4½	108	3 8 24		13	882	32 1 19	2	21½	2403	88 1 10	
5	135	4 3 23		13½	954	35 0 7	2½	22	2520	92 2 16	
5½	162	5 3 22		14	1026	37 2 24	2½	22½	2646	97 1 3	
6	189	6 3 21		14½	1098	40 1 12	3	23	2763	101 2 8	2½
6½	216	7 3 21		15	1170	43 0 1	3	23½	2880	105 3 14	
7	252	9 1 1		15½	1251	45 3 26	3½	24	3006	110 2 1	2½
7½	288	10 2 9		16	1332	48 3 24	3½	24½	3132	115 0 16	
8	336	12 0 26		16½	1413	51 3 21	4	25	3258	119 3 2	2½
8½	378	13 3 15	¾	17	1503	55 1 0	4	25½	3393	124 2 16	
9	423	15 2 25	¾	17½	1593	58 2 6	4½	26	3528	129 2 22	2½
9½	468	17 0 22	¾	18	1683	61 3 13	4½				
10	522	19 0 21	1	18½	1782	65 2 1	4½				

## RULES AND INSTRUCTIONS FOR SAIL-MAKING.

THE following directions, touching the cutting, goring, sewing, seaming and roping of sails have been cautiously culled from the best authorities:—

### CUTTING OUT SAILS.

SAILS are cut out cloth by cloth, the width being governed by the length of the yard, gaff, boom, or stay; the depth by the height of the mast. The width and depth being given, find the number of cloths the width requires, allowing for seams, tabling on the leeches, and slack cloth; and in depth, allow for tabling on the head and foot. Sails cut square on the head and foot, with gores only on the leeches, as some top-sails are, the cloths on the head between the leeches are cut square to the depth; and the gores on the leeches are found by dividing the depth of the sail by the number of cloths gored, which gives the length of each gore. The gore is set down from a square with the opposite selvage, and the canvas being cut diagonally, the longest gored side of one cloth makes the shortest side of the next; consequently, the first gore being known, the rest are cut by it.

For the length of gores corresponding to the depth on the selvage, observe the following table.



*Table shewing the length of any gore by its depth, from one inch to six feet in depth, on the selvage of canvas twenty-four inches wide.*

Depth down the Selvage.		Length of the Gore.		Depth down the Selvage.		Length of the Gore.		Depth down the Selvage.		Length of the Gore.	
Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
0	1	2	0	2	1	2	10 $\frac{3}{4}$	4	1	4	7
0	2	2	0	2	2	2	11 $\frac{1}{2}$	4	2	4	7 $\frac{7}{8}$
0	3	2	0 $\frac{1}{8}$	2	3	3	0 $\frac{1}{4}$	4	3	4	8 $\frac{3}{4}$
0	4	2	0 $\frac{1}{4}$	2	4	3	1	4	4	4	9 $\frac{3}{8}$
0	5	2	0 $\frac{3}{8}$	2	5	3	1 $\frac{1}{4}$	4	5	4	10 $\frac{1}{2}$
0	6	2	0 $\frac{1}{2}$	2	6	3	2 $\frac{1}{2}$	4	6	4	11 $\frac{3}{8}$
0	7	2	0 $\frac{3}{4}$	2	7	3	3 $\frac{1}{4}$	4	7	5	0 $\frac{1}{4}$
0	8	2	1 $\frac{1}{8}$	2	8	3	4 $\frac{1}{8}$	4	8	5	1 $\frac{1}{8}$
0	9	2	1 $\frac{1}{4}$	2	9	3	5	4	9	5	2
0	10	2	1 $\frac{1}{2}$	2	10	3	5 $\frac{1}{2}$	4	10	5	2 $\frac{3}{8}$
0	11	2	2 $\frac{1}{4}$	2	11	3	6 $\frac{3}{4}$	4	11	5	3 $\frac{3}{4}$
1	0	2	2 $\frac{3}{4}$	3	0	3	7 $\frac{1}{8}$	5	0	5	4 $\frac{5}{8}$
1	1	2	3 $\frac{1}{4}$	3	1	3	8 $\frac{1}{2}$	5	1	5	5 $\frac{1}{2}$
1	2	2	3 $\frac{3}{8}$	3	2	3	9 $\frac{3}{8}$	5	2	5	6 $\frac{3}{8}$
1	3	2	4 $\frac{1}{4}$	3	3	3	10 $\frac{1}{4}$	5	3	5	7 $\frac{1}{4}$
1	4	2	4 $\frac{3}{4}$	3	4	3	11 $\frac{1}{8}$	5	4	5	8 $\frac{1}{8}$
1	5	2	5 $\frac{1}{4}$	3	5	4	0	5	5	5	9
1	6	2	5 $\frac{3}{4}$	3	6	4	0 $\frac{3}{8}$	5	6	5	10
1	7	2	6 $\frac{1}{4}$	3	7	4	1 $\frac{1}{8}$	5	7	5	11
1	8	2	7	3	8	4	2 $\frac{3}{8}$	5	8	6	0
1	9	2	7 $\frac{3}{4}$	3	9	4	3 $\frac{1}{2}$	5	9	6	1
1	10	2	8 $\frac{1}{2}$	3	10	4	4 $\frac{3}{8}$	5	10	6	2
1	11	2	9 $\frac{1}{4}$	3	11	4	5 $\frac{1}{4}$	5	11	6	3
2	0	2	10	4	0	4	6 $\frac{1}{2}$	6	0	6	4

IN THE LEECHES OF TOPSAILS CUT HOLLOW,\* the upper gores are longer than the lower ones; and in sails cut with a roach leech, the lower gores are longer than the upper ones. This must be regulated by judgment, and care taken that the whole of the gores do not exceed the depth of the leech. By drawing on paper the gored side of the sail, and delineating the breadth of every cloth by a convenient scale of equal parts of an inch to a foot, the length of every gore may be found with precision.

SAILS GORED WITH A SWEEP on the head or foot, or on both, have the depth of their gores marked on the selvage, from the square of the given depth on each cloth, and are cut as above; the longest selvage of one serving to measure the shortest selvage of the next, beginning with the first gored cloth next the middle in some sails, and the first cloth next the mast leech in others.

For those gores that are irregular no strict rule can be given; they can only be determined by the judgment of the sail-maker, or by a drawing, and a scale of equal parts.

Although, in the following directions, the total amount of all sweep-gores is calculated at the rate of so many inches per cloth, each cloth has only such a gore as will form the sweep required.

The length of the reef and middle-band is governed by the width of the sail at their respective places. The

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\* Straight leeches, it is said, will be introduced into His Majesty's service by the present Surveyor of the Navy.

leech-linings, buntline-cloths, TOP-LININGS, MAST-CLOTHS, and CORNER PIECES, are cut agreeably to the depth of the sail, and are particularly directed hereafter. Each cloth and every article should be properly marked with charcoal, to prevent confusion or mistake.

#### SEAMS.

SAILS have a double flat seam, and should be sewed with the best English-made twine of three threads, spun three hundred and sixty fathoms to the pound, and have from one hundred and eight to one hundred and sixteen stitches in every yard in length.

The twine for large sails used in the navy is waxed by hand, with genuine bee's wax, mixed with one-sixth part of clear turpentine; and, for small sails, in a mixture made with bee's wax, four pounds; of hog's lard, five pounds; and clear turpentine, one pound. In some instances, the twine is dipped in tar, softened with a proper proportion of oil.

It is the erroneous practice of some sail-makers not to sew the seams any farther than where the edge is creased down for the tabling; but all sails should be sewed quite home to the end, and, when finished, should be well rubbed down with a rubber.

Boom-main-sails, and the sails of sloops and drivers of ships generally, have the seams broader at the foot than at the head.

The seams of courses and top-sails are stuck or stitched up, in the middle of the seams, along the whole length, with double seaming twine; and have from sixty-eight to seventy-two stitches in a yard.

## TABLINGS.

THE tablings of sails are of a proportionable breadth to the size of the sail, and sewed at the edge with sixty-eight to seventy-two stitches in a yard.

## LININGS.

MANY sails have linings in various parts, to give them additional strength; such as the reef-bands, middle-bands, leech-linings, buntline-cloths, &c.

All linings are seamed on, and stuck with from sixty-eight to seventy-two stitches per yard.

Reef-bands should not be put on till the sail is sewed up; and it is the opinion of many, that middle bands should not be put on till the sail is half worn.

## HOLES.

HOLES are made by an instrument called a pegging awl, or a stabber, and are fenced round by stitching the edge to a small grommet, made with a log or other line. When finished, they should be well stretched or rounded up by a pricker or a marline spike.

Sails have two holes in each cloth at the heads and reefs of courses, top-sails, and other square sails; one hole in every yard in the luff of flying-jibs; and one in every three-quarters of a yard in the luffs of other stay-sails.

REEF AND HEAD HOLES of large sails have grommets of twelve-thread line, worked round with eighteen or twenty-one stitches; small sails have grommets of nine-thread line, with sixteen or eighteen stitches, or as many as shall cover the line, and smaller holes in proportion.

In order to strengthen sails, it has been recommended to have the holes in the heads and reefs placed thus:—One hole to be made in the seam, another in the middle of the canvas, and so alternately; the holes in the seam to be half an inch lower than the hole in the middle of the canvas. By this the strain would lie upon the holes in the seam, which are more capable of bearing it than the holes in the middle of the single canvas.

It is likewise recommended to cut these holes with a hollow punch, instead of making them with a stabber or pricker.

The holes for marling the clues of sails and the top-brims of top-sails have grommets of log line, and should have from nine to eleven stitches. Twelve holes are worked in each cloth.

Marling-holes of courses are of three-fourths of the depth of the tablings at the clues from the rope, and those of top-sails are at half the depth of the tablings at the clues, and top-brim from the rope.

#### BOLT-ROPE.

BOLT-ROPE should be well made of fine yarn, spun from the best Riga-rhine hemp, well topt, and sewed on with English-made twine of three-threads, spun two hundred fathom to the pound. The twine in the navy is dipped in a composition made of bee's wax, four pounds; hog's lard, five pounds; and clear turpentine, one pound; and, in some instances, the twine is dipped in tar, softened with oil.

Bolt-ropes should be stowed in a stove by the heat

of a flue, and not in a baker's oven, or a stove tub ; and tarred in the best Stockholm tar. The flexibility of them should be always considered, in taking in the slack, which must rest on the judgment of the sail-maker.

The clues and top-brims should be wormed while the bolt-rope is sewing to the sail, and before both parts are confined.

Bolt-ropes of all sails should be neatly sewed on through every cunline of the rope ; and, to avoid stretching, the rope must be kept tightly twisted while sewing on, and care taken that neither too much nor too little slack is taken in. They are to be cross-stitched at the leeches every twelve inches in length ; at every seam, and in the middle of every cloth at the foot, with three cross-stitches. Four cross-stitches should be taken at all beginnings and fastenings off ; the first stitch given twice, and the last three times. Small sails have two cross-stitches at every seam, and three at every fastening off.

#### CLUES.

THE clues of large sails are made of rope, called a CLUE-ROPE, which splices into the bolt-rope ; but the clues of smaller sails are formed with the bolt-rope only.

The clues of fore courses are made with clue-rope, being larger than the bolt-rope in the same proportion as the clue-rope of main courses. It splices into the foot-rope at the first buntline cringle, and into the leech-rope at one-eighth of the depth from the foot. It is prepared and fastened in other respects like the clue-rope of main courses.

The clues of main and fore-top-sails are made of the foot-rope, which is left sufficiently long\* to form the clues, and splices into the leech-rope at the lower bow-line cringle. It is wormed, parcelled, and served at the clues, and three feet each way from them; it is marled on to the sail for the extent of the serving on each side the clues, which are seized as those of main and fore-courses.

The clues of top-gallant-sails and royals are made of bolt-rope, which is served home to the clues: the clues only are served with spun-yarn, and seized with small line.

#### CRINGLES.

CRINGLES should be made of the strands of new bolt-rope, half an inch smaller than the bolt-rope on the sail in which they are stuck.

Reef and reef-tackle-pendant cringles are stuck through holes made in the tablings, and the lower ends are put through the bolt-rope once more than the upper ends, being more liable to be drawn out.

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\* When clues are fitted dog-and-bitch fashion, it becomes necessary to *shorten* them. This method of fitting clues is little known in the service. It is strongly recommended, and must be ever appreciated by practical seamen.





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ST. MARTIN'S LANE.

THE  
NAVAL SERVICE  
OR  
OFFICERS' MANUAL.





THE  
NAVAL SERVICE

OR

OFFICERS' MANUAL

FOR EVERY GRADE IN HIS MAJESTY'S SHIPS.

BY

CAPT. W. N. GLASCOCK, R. N.

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# GUNNER.

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## PRELIMINARY REMARKS.

AMONGST the many anomalies which have long “held their own” in His Majesty’s service, none appear to carry with it more of professional reproach, than that of conferring on an individual a *calling*\* which, in his own ears, must always sound like a libel. For what possibly can be more incongruous than to expect that a man totally

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\* Dr. Johnson’s well-known joke,

“ Who drives fat oxen must himself be fat,”

is not so ludicrous as the qualities tested in the appointment of a gunner. Something more analogous to the absurdity in question may be found in the fact of a man of the name of Dobbs, who, upon applying for the situation of *driver* to the Bristol mail, rested his claims on the circumstance of his being one of the *fastest walkers* in England. But, unlike the naval examiners, the commissioners were so dull as not to recognise the similitude between quick walking and quick driving.

unacquainted with the properties and power of powder,\*—devoid of the slightest knowledge and practice of projectiles, and untrained in the intricacies relating to the elevation of cannon, can be competent to discharge, with any degree of efficiency, the duties delegated to the naval gunner.

It is true, that, previously to obtaining his warrant, he is compelled to pass an examination, to undergo an ordeal (any thing but *fiery*), before a tribunal officially convened, and consisting of a captain, a master, and three gunners. The president of this conclave probably directs the master to examine the candidate in *seamanship*. The master proceeds, and finds him perfectly at home at bending a buoy-rope, splicing a cable, fitting mast-head slings, or turning-in a dead-eye; and concludes his part of this important examination with a few interrogations, touching “relieving” tackles, the lead, the marks and deeps of the line.

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\* “ Powder when on fire occupies at least 4000 times more space than when in grains; therefore, if it be supposed that the quantity of powder with which a cannon may be charged possesses one-fourth of a cubical foot in grains, it will, when on fire, occupy the space of 1000 cubical feet.” (*Bigot de Morogues.*) English gunpowder contains 74 parts of saltpetre, 15 of charcoal, and 10 of sulphur.

The senior gunner next takes the applicant in hand, and expresses himself perfectly satisfied with his *parrot* replies on the subject of 'filling' and proportioning powder.

The next examiner takes the candidate to task, and requires him to proceed in the process of securing a lower-deck gun. This, every seaman can do, whether in the King's or any other service; and, therefore, the man under examination is soon discovered to be thoroughly acquainted with this branch of the *gunner's* art.

The junior Warrant then, by way of parading his professional knowledge, desires the seaman, who probably knows more about the "winding of a call," than the windage of a shot, to reeve the purchase by which he is to get in his lower-deck guns. The *boatswain's mate*\* proceeds according to custom, but, in his anxiety to go to work "ship shape and Bristol fashion," he totally forgets his '*gurnet*.' Being, however, found to be perfectly *au fait* at fitting the '*fish*,' he is permitted to pass muster.

The profession will pronounce whether this is,

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\* More boatswains'-mates than gunners'-mates pass for gunners.

or is not, an extravagant picture of the passing of a gunner.

The foregoing observations are by no means intended to reflect upon the gunner of the service, who frequently procures his warrant as a recompense for exemplary conduct, and sometimes for his general services in seamanship. But, though the gunner may have had little leisure or opportunity to study the science of gunnery, yet, by recent arrangements emanating from the Lords of the Admiralty, he may now acquire no inconsiderable proficiency by giving his attention to the system of instruction and experimental practice pursued on board His Majesty's ship, "Excellent," in Portsmouth harbour.

He is therefore recommended, and particularly when serving in ordinary,\* to devote his leisure to the above-mentioned system of instruction, resting assured that, in this necessary pursuit of professional knowledge, he will not only find it a source of considerable amusement, but eventually a certain passport to favorable official notice.

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\* To encourage voluntary study, it were desirable that gunners in ordinary were excluded from keeping watch.

## GENERAL DIRECTIONS.

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### MAGAZINE DUTIES.

WHENEVER the gunner may have occasion to enter the magazine he should state to the commanding officer the object of his visit; and on no account should the keys of the magazine be procured through the agency of other hands; he should therefore understand, that, for such purpose, a personal application\* must be made to

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\* In this precaution a moral may be found, in the following melancholy occurrence, which transpired at sea, on board His Majesty's ship "D ——" 74.

The gunner, a most exemplary, steady, sober, intelligent seaman, applied to the senior-lieutenant for permission to open the magazine, preparatory to "filling powder," after the officers had dined in the ward-room. The demeanour of the man accorded perfectly with his wonted propriety of conduct. The first-lieutenant was occupied at the moment the application was made, and from the

the senior lieutenant. Previously to repairing below, he should muster the magazine men on deck, for the personal inspection of the officer-of-the-watch.

**STOWAGE OF POWDER.**—The cases, or barrels, containing different descriptions of cartridges, should be stowed in separate racks for the purpose of facilitating a ready supply in action. This precaution may be easily taken, as the precise nature of all ammunition is marked upon the head and cover of each barrel and case.

**STOWAGE OF LATEST SUPPLY.**—Whenever an additional supply of powder be shipped, the gun-

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confidence he had always placed in the gunner, would, at once, have acceded to his request, had the ship's company not been ordered below to "clean for muster," the day being Sunday. But, struck by the irregularity of such an application on this day, the lieutenant declined the keys. To this refusal, the gunner made no reply, but retired below, apparently satisfied with the reason his superior had assigned for refusing to fill on that day "the portion of powder" the gunner had reported "as requisite for ready use." An hour had hardly elapsed, when the poor man, whose general qualities entitled him to esteem, (for the author had sailed with him in the same ship, and knew well his worth,) was discovered in his cabin with his throat nearly severed. The wound was instantly stitched together, but the unfortunate man recovered only to repeat more effectually the suicidal deed in Hazlar Hospital.

What can be inferred from this? The man was undoubtedly deranged; and the sagacious caution of the lieutenant possibly saved the ship, and the lives of all on board.



ner should take the precaution to place such supplies on racks, purposely appropriated to the "Latest Supply." By such arrangement, no possible mistake can occur, nor can any excuse be permitted for that reprehensible practice of using new powder before the old is "expended."

**MAGAZINE TOOLS.**—The gunner is not to permit the magazine men to use any other tool than the wooden setter, for starting the copper hoops of the powder barrels. The application of the gun-metal adze is a practice attended with considerable danger; it being on record, that strong sparks have been produced by the stroke of a metal adze against a metal setter, or a copper hoop.

**MAGAZINE PREPARATORY TO ACTION.**—When the magazine be opened, preparatory to action, the gunner should immediately "ease the screws" which confine the cartridges in their cases. By this precaution, and removing the lids as required, powder may be as readily supplied as if the cartridges were regularly laid upon racks.

**MAGAZINE PASSAGES TO BE SWABBED.**—Upon every occasion that the gunner be employed in the magazine, he should, upon closing and se-

curing the door, direct that the different passages leading to the light-room and magazine be swabbed with half-wetted swabs.

#### SIGHTS.

ALL "sights" entrusted to the gunner's charge are to be affixed to the guns, conformable to the instructions he will receive, on application at the gun-wharf.

When fixed to the guns, the sights are to be shifted as seldom as possible; and when covers are supplied, they are to be kept always on, except when in actual use. The gunner should also take every precaution that the sights be not displaced, or disturbed in their line of direction, by pressure, or aught of violent collision with oars, spare spars, or running ropes. In order that the sights may be kept ready for service, the gunner should cause their joints to be oiled, at least, twice a week.

#### GUNS KEPT DRY, AND FREE FROM RUST.

THE ordnance should be kept as dry as possible. The prevalent practice of washing the guns every morning is at once prejudicial to both cordage and cannon. The gunner is strictly enjoined to keep

the bores and vents of the guns free from rust, and to be careful that the latter be always clear.

#### INSPECTION OF GUNS—SMALL ARMS.

THE gunner should frequently examine the state of the guns, locks, carriages, and carronade-slides, in order that such as may be found defective may be immediately repaired, or replaced. He should also inspect, as often as possible, the condition of the musketry and *spare* small-arms confided to his charge; and see that they be kept clean, and, in every respect, fit for service.

#### LIGHTED-MATCHES.

HE is never to allow any match to be burnt in the day, nor more than two lengths at the same time in the night, without the special direction of the captain. When the match is kept burning for ready use, precaution should be taken to place it in its proper tub, hanging over a proportion of water. The charge of the burning match should be given to the gunner's mate-of-the-watch.\*

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\* Negligence on the part of the gunner of the "D—m—d" frigate, in the early part of the late war, was nearly the cause of the ship's destruction by fire. A match, which was supposed to

## SALUTES.

To insure the certainty of the saluting-guns being all unshotted, the cartridge should be drawn as well as the shot ; for, as it has been well observed, “ a gun may be loaded with two shot, and only *one* may be drawn.” Precaution should also be taken to point and elevate the guns in a position such as to prevent the possibility of doing damage, should, from any unfortunate neglect, a shot be fired from any of the guns selected for salute.\* The gunner should have two or three extra guns ready, to supply the place of such as may happen to “ hang fire.”

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have been extinguished, was taken down with others to the gunner's store-room ; the consequence was, that about, two hours subsequently to the removal of the match, the ship was in flames below. Six inches at least of every match that has been used in an ignited state, should be *cut off* from the burnt end, even though precaution has been taken to insert it in water.

\* “ Sentinels,” says a professional writer, “ should be placed over the guns till the salute is fired.” The same writer says he “ has seen *five* shot fired from *one* vessel, one of which cut the *Victory's* main stay.”

The necessity of these cautions is rendered painfully obvious by the accident which recently occurred in a French port, during the salute of an American vessel-of-war, when, in consequence of the almost culpable neglect of the gunner, in omitting to draw the guns, several men in the neighbouring vessels were killed and wounded.

REPORT DAILY DUTY.

THE gunner should make a return to the senior lieutenant of the daily-duty performed, when, at the same time, he should submit to his superior a “ statement of the work to be performed on the ensuing day.”

## FIRST COMMISSIONING.

## FITTING THE MAGAZINE.

WHEN the ship is "in the hands" of the dock-yard artificers, the gunner should inspect the established fashion of fitting the magazines, and report to the captain, or commanding officer, any plan which may strike him as tending to facilitate stowage, or to prevent confusion in the important particular of supplying powder in time of *action*. Labels properly placed will essentially contribute to order and *despatch*. Such labels as "*Ready use*"—" *Last supply*"—" *Lower-deck*"—" *Middle-deck*"—" *Main-deck*" &c., according to the deck the magazine is intended to supply, should be legibly painted over each rack.

CLEARING AND AIRING MAGAZINES.—When the magazines are reported “out of progress,” or as finished by the artificers of the yard, the gunner, in conjunction with the carpenter, should carefully inspect the state and condition of each. He should also see that they be perfectly dry, free of shavings and saw-dust, and thoroughly swept, ready for the reception of powder. Should the slightest appearance of damp be detected, the circumstance should immediately be made known to the captain or commanding officer, who will order stoves below to remedy the evil.

#### FITTING RIGGING AFLOAT.

SUCH of the gunner’s geer and rigging which required to be fitted afloat should be specifically assigned to *one* watch of his crew. The practice of working one day on *shore* and one day afloat is never attended with beneficial effects. When two parties take it in turn to execute any particular service, it is seldom neatly or efficiently put out of hand. Both parties disown the errors of each, and neither considers himself responsible for the blunders or careless execution of the other.

RIGGING MAIN-MAST AND MAIN-YARD.—In

the execution of these duties the gunner is referred to the "directions addressed to the boatswain," under the head of "Placing and setting up rigging"—"Mast-head slings"—"Futtock-staves," &c.

**FITTING THE FISH GEER.**—The gunner should consult the master and senior lieutenant as to the fitting of this geer. In few ships is the fish-fall fairly led.\*

#### GUN-WHARF DUTIES.

THE gunner should daily devote a considerable portion of his time to these duties.

He should make an early application for a "gun-wharf party;" and, in addition to one watch of his own crew, request from the senior lieutenant two† seamen from each department of the ship;

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\* A professional writer justly observes, that "the strap of the block at the davit-end is generally too short; from this circumstance the shell of the block binds against the davit, by which the fall does not lead fair upon the inner sheave, which is thereby rendered nearly useless. Of consequence, more strength is necessary to fish the anchor than would be were the strap *just* long enough to allow the block to play free of the davit."—*Griffiths's "Points of Seamanship."*

† This number should be increased in a ratio proportionate with the size of the ship, or complement of men. The above number will suffice for a frigate; in ships of the line, two additional seamen may be allowed for every deck.



the whole to be under the direction of a steady, and, if possible, a passed midshipman.

**FITTING BREECHINGS AND TACKLES.**—In assigning to the gun-wharf party divisional duties, care should be taken that the people appointed to fit breechings and strop blocks be selected from the best and most experienced seamen of the “gunner’s gang.” The “gun-tackle party” should be warned of the necessity of thoroughly stretching the strops preparatory to “turning-in” and “heaving-to” the blocks.

#### SHACKLE-BREECHING.

If it be required to fit the breechings upon this recently improved plan,\* it will be necessary to taper and point *both* ends of the rope preparatory to turning-in a shackle on each extremity. The shackle should be turned-in and secured to each end of the breeching by two separate seizings, one close to the shackle, and the other towards the pointed end of the rope.

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\* By this simple and serviceable method, the breeching may be shifted in a few seconds, it being no longer necessary to reeve it through the ring at the breech. An opening is now made in the cascabel, which admits the introduction of the breeching on the bite; in some cases, the cascabel is fitted with a hinge or “snatch,” which, when closed, confines the breeching, and prevents it jumping out on the recoil of the gun.

## GUN CARRIAGES.

As soon as the gun carriages and carronade slides are selected for the ship, the gunner is cautioned to inspect them severally with a close and scrutinizing eye, and see that each be perfectly sound and fit for service. In this inspection, he is particularly recommended to examine the axletrees and inner sides of the carriages, in order that he may satisfy himself that they are in no way tainted or diseased with the dry rot. The most simple method to detect disease in the wood of which the carriage is composed, is by hitting the *heads* of the confining bolts with a stout maul. The gunner is also cautioned\* to inspect closely the trucks, traversing-rollers, pins, and fore-locks, pertaining to each gun-carriage and carronade slide.

## GAUGING SHOT—EFFECTS OF WINDAGE.

THE shipment of shot is too often attended by injurious haste; and the *windage*† of shot is not

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\* These precautions become the more necessary on the part of the gunner, when he bears in mind, that, by King's regulations, he is directed, on "the delivery of stores, to give to the store-keeper of the Ordnance a certificate specifying that every thing has been *delivered* to him in *complete* and good order."

† The *windage* is the difference between the diameter of the shot and the calibre of the gun.

sufficiently studied in the naval service. The prejudicial effects which windage has upon accuracy, arises from the reflections\* of the ball passing along the bore. These will manifestly be greater in proportion as the difference between the diameter of the shot and the calibre of the gun increases.

If time permit—though, in this particular, time should be a secondary thought, compared with the importance of such precautions—the gunner should see passed through the proper gauge, all shot which may seem unusually encrusted with rust. He will be also required to keep separate the “different sorts.”

#### PREPARATIONS FOR GETTING IN THE GUNS.

WHEN the gun-geer for “*ready use*” is perfectly fitted, the gunner should report the circumstances

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\* From these reflections, “a shot acquires a sort of sig-zag motion, and does not generally quit the cylinder in the direction of its axis. If the last bound be upon the *lower* part of the bore, the angle of the shot’s departure will be increased; if *above*, diminished. These affect the length of range. If the last reflection be on either side of the bore, the line” (direction) “will be altered; and, in every case, the friction arising from these rubs will give the ball an irregular whirling motion, productive of great inequality of resistance from the air, unless the rotation be at right angles to the direction of the projectile’s flight.”—*Naval Gunnery*.

to the senior lieutenant, and consult with that officer as to the time best suited to move such gear from the shore to the ship. The removal, however, is not recommended until the day before getting in the guns. The tackles and breechings pertaining to each gun should be placed opposite to their respective ports on the different decks.

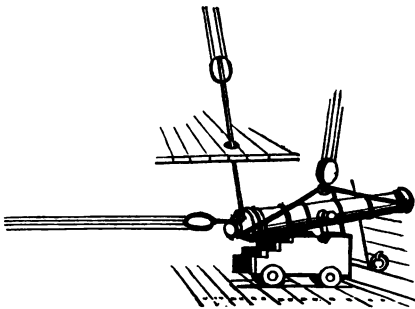
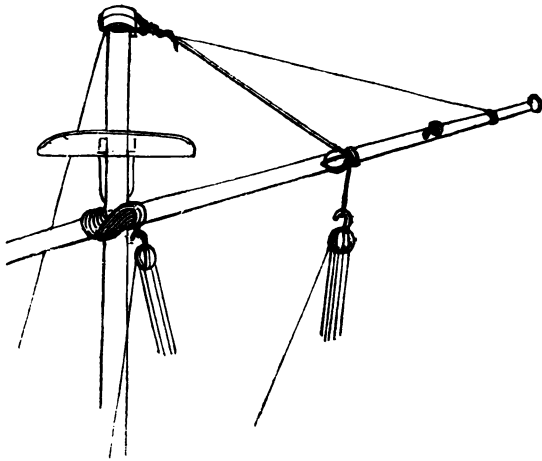
#### REEVING PURCHASE FOR GETTING IN LOWER AND MIDDLE-DECK GUNS.

PROCEED as follows:—Top the main-yard\* up at an angle of fifteen or twenty degrees above the horizon; bouse the trusses well taut, and lash the yard with a stout lashing† in the wake of the mast; send a whip down from the outer quarter of the yard, so as to plumb a few feet without the lower-deck port, through which the guns are intended to enter. By this whip trace up a “top-block” to

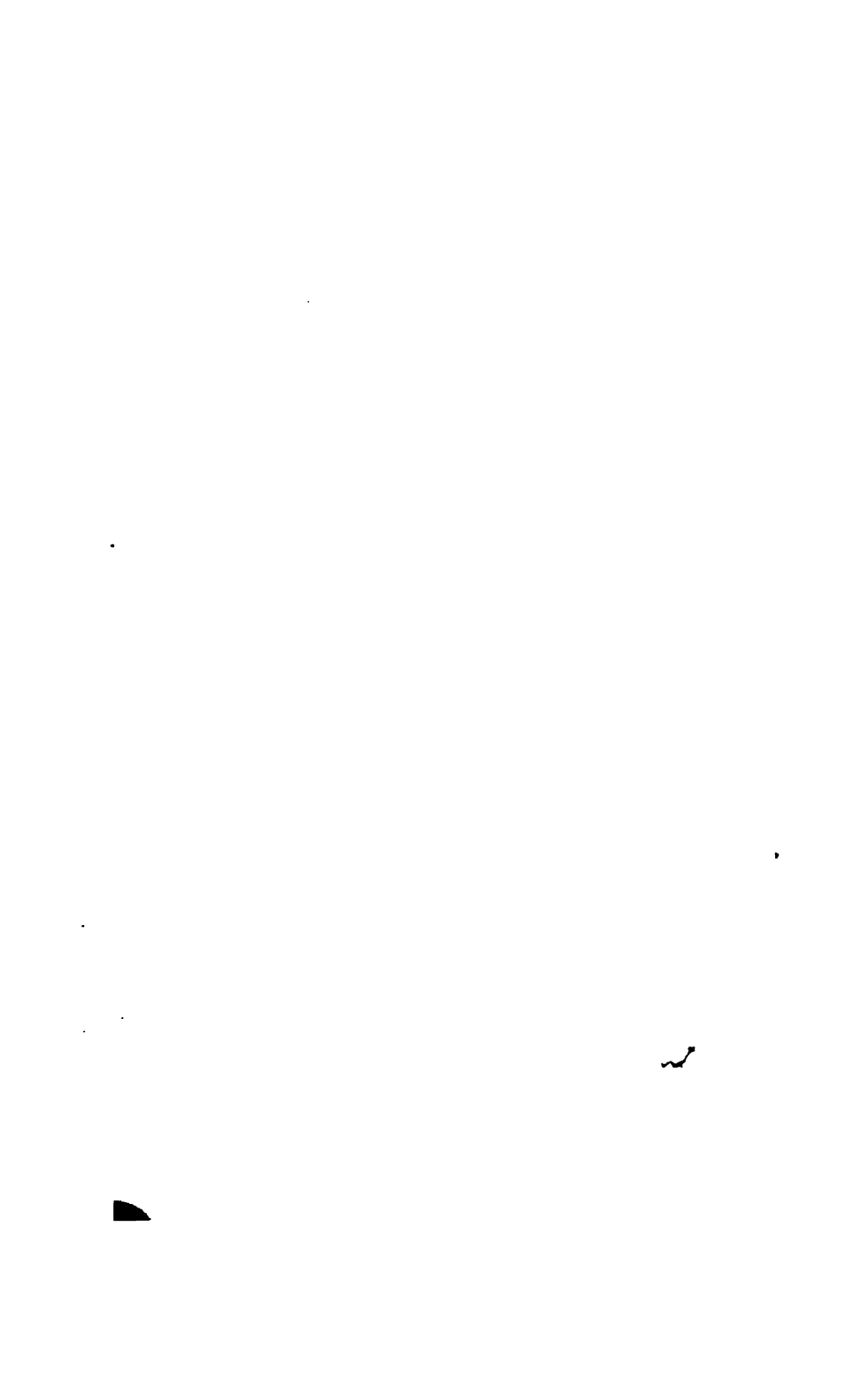
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\* The main-yard is sometimes lowered a little and topped up at a considerable angle. But this practice is now disused, as giving unnecessary trouble. It is desirable that an equal strain be brought upon the lift, top-sail-sheet, and burton. The practice, however, of frapping them together is not recommended.

† In securing the main-yard to the mast, care must be taken that the lashing be passed in a manner to meet the strain and pressure which the weight of the gun will necessarily bring upon the lower or under turns.



N.B. In the above sketch it will be seen that the frapping-  
turns round the slings of the gun have escaped the notice of  
the Engraver.



the quarter of the yard, placing the hook in the direction of the yard-arm, and lashing it well with a stout lashing passed with crossing turns both round the hook and the yard. Through the top-block reeve the pointed end of the top-tackle pendant, taking it over the cap between the lower-mast-head and the heel of the top-mast, and securing it with two half-hitches, and a seizing on its own part. Whip next up, and hook to the thimble in the pendant, a top-tackle-fall block, through which, and a lower block of the same description, reeve the *purchase*, clinching the standing part round the main-yard, close to the lashing of the top-block.

When rove, point the purchase-fall through a leading block on the break of the quarter-deck, and again through snatch-blocks hooked to the Sampson's-post on each side abaft. This mode of leading the fall will allow it being worked on both sides of the quarter-deck, as well as on the opposite gang-way.

Inside the *purchase*, and well *in* with the quarter-block, clap round the yard a stout strap or salvagee, placed in a position to plumb the hole bored in the deck for the gurnet-pendant. To this strap or

salvagee, hook the quarter-tackle, the lower block of which hook to the thimble of the gurnet-  
pendant.

The gurnet-pendant should be sufficiently long when passed through the holes bored in the different decks, to reach a few feet without the cell of the lower-deck port, through which the guns are to enter. The holes for the gurnet should be bored in a line leading to the centre of the receiving port.

**HOISTING-IN.**—When the gun is slung, hooked, and walked sufficiently high to enter the port, a thwartships-tackle, worked within on the lower-deck, in a position abreast of the port, is to be hooked to a small strap attached to the breech ring at the same time of hooking the gurnet.

**CAUTION.**—When the gurnet purchase is raising the breech to the level required to place the gun in its carriage, care must be taken that the main-purchase be *not* lowered by a *turn*, but that the men on the fall *walk back* with a steady step.

When the gun is lodged in its carriage, it is removed to its proper port, and *another* carriage is rolled to the receiving port, ready for the reception of the next piece.



MAIN-DECK GUNS are generally got in "over all." A top-tackle pendant, secured round the head of the lower-rigging, led down between the trestle-trees in the direction of the mast-head-slings, and a top-tackle hooked in the thimble of the pendant, is sometimes, and with much propriety, substituted for the common stay-tackle purchase.

#### CARRONADES—LONG & SHORT BOLTS.

IN shifting these bolts, considerable time is lost by the seaman, who is stationed to perform this duty, not knowing the precise position to place the slide. It not infrequently happens that the trainers are for several minutes training forward and training aft, before the man holding the bolt in his hand can enter the instrument. To insure certain celerity in the execution of this service, it is recommended to paint marks that will indicate the exact position to which the slide should be moved.

Both bolts should be fitted with a light nettle laniard, secured to the head of each, in order to facilitate\* its movement in lifting it from the socket.

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\* Many nails and fingers have been injured in this operation.

SHIPMENT OF SMALL ARMS, AND  
ARTILLERY STORES.

THE pell-mell system of loading lighters,\* or of “bundling into boats” warrant-officers’ stores, for the purpose of conveying them from the shore to the ship, is a custom for which even the often mis-applied pretext of “*despatch*” (query *delay*) can offer no plausible excuse. Nor is the practice of shipping stores, regardless of all preparation afloat, the less reprehensible. The gunner is therefore enjoined to consult the senior lieutenant as to the *precise period* at which that officer may deem it desirable to receive from the arsenal the small arms, artillery stores, and accoutrements allowed to the ship.

The arms should be passed below, and placed in their respective stands in the store-room, and not permitted to be heaped in piles on the lower-

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\* It would materially tend to promote *despatch*, as well as to insure order and regularity in the stowage of stores, if each warrant-officer were allowed a *separate* day to draw and ship his supplies.

How often cartouch-boxes, belts, bayonet-sheaths, sword-scab-bards, boarding-pikes, &c., have been seen heaped in the most disorderly state in the hold of an arsenal lighter.

deck. The boarding pikes\* and cutlasses should be becketed by people appointed for the purpose.

**TRANSPORTING SIGHTS.**—Should these instruments not be conveyed to the ship in the Arsenal lighter, it is recommended to intrust their transit to a steady midshipman, the armourer, his mate, a corporal, and a couple of marines.

**HINT.**—The sights should *not* be shipped, but kept in some place of security till the dock-yard artificers have left the ship.

**SPONGE CAPS.**—The sponge caps should be painted black, and marked with white numbers. The paint should be permitted to harden on shore before the caps be removed to the ship.

**APRONS FOR THE LOCKS.**—The gunner is recommended to fit to one part of the laniard attached to the apron of the lock, a copper thimble. This mode of fitting the laniard will insure the apron being cast off and disengaged from the gun with certain celerity, and will prevent the knife being so often called into play.

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\* The *points* of the boarders' pikes should be covered with a *cap*. A slung musket-ball, with a hole drilled in it to receive the point of the pike, and attached to the staff by a piece of white-line, will serve every purpose of a cap. When the boarders are exercised, caps on the points of the pikes prevent accidental wounds.

**CHISSELS, MALLETS, AND MARLINE-SPIKES.**—A chissel and mallet, attached to each other by a light-laniard, should be placed between every two guns on each side of the different decks. A proportionate number of marline spikes should be also allotted to each division of quarters.

**FIRE-BUCKETS.**—To each fire-bucket should be attached a small hand-swab and regular length of laniard,—the swab to be placed in the bottom of the bucket, the laniard to be made of sinnet\* and secured to the handle. The fitting of these buckets should be entrusted to the day-mates, and should be all complete before the people shift from the hulk to the ship.

**POWDER BOXES.**—It has long been a practice in the service to secure the tops of the powder-boxes with white marline. Nothing can be worse. In time of action this line is liable to become besmeared with both blood and powder, and therefore to be an ugly evidence; but as, worse than this, it is in danger of taking fire, and so might be handed down to the magazine in the shape of a

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\* Sinnet is best suited to this purpose; small rope is too easily converted into laniards and lashings for hammocks.

quick-match, it is more advisable that the tops of these boxes be fitted with leathern thongs.

**TUBE-BOXES.**—The tube-boxes appropriated to the guns of the different decks should be severally numbered, in white figures, on the front of the box, such as No. 1, M<sup>n</sup> D., No. 2, L<sup>r</sup> D., &c.

In ships of the line the tube boxes should be placed over the beams in the cabin, ward-room, and gun-room. Pigeon-hole fashion, with a falling front, appears to be the best mode to secure the boxes to the beams. This method of placing the boxes renders the tubes\* less liable to dampness and damage.

**FIGHTING LANTERNS.**—The fighting lanterns should be placed in their respective buckets, and suspended over each port on the line of battery of each deck. Buckets and lanterns should be marked

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\* With tubes of uncertain, or sluggish action, it is useless to expect accuracy in firing, even with the best trained men; “for suppose a vessel in action be rolling eight degrees, performing each roll in about four seconds of time; when the nature and condition of the tube and priming is defective, or bad, it will very frequently happen that an interval of *one* second of time, and sometimes considerably more, will take place between the pulling of the trigger-line and the discharge of the piece, and in that time the *elevation* of the gun would alter *two* degrees.”—*Naval Gunnery*, p. 2, 3.

and numbered according to the deck and gun to which they severally pertain.

**BLUE-LIGHTS & ROCKETS.**—A sufficient number of blue-lights and rockets, for signal purposes, should be placed between the beams over-head in the captain's cabin; the remaining supply should be stowed in the magazines in their respective boxes.

#### MAKING WADS.

MUCH of time and trouble will be spared the gunner by the introduction of the grummet wad.\* He should, however, not neglect to prepare for the "sea charge" a necessary proportion of round wads; nor should he postpone fitting laniards to those intended to be attached to the tompkins in use.

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\* There can be no question, that for *actual* service the "grummet wad" possesses many advantages over the round one, particularly as experiment has proved that wads do not prevent the escape of inflammable powder by the windage, nor under any circumstances occasion any sensible difference in the velocity of the ball. "This," observes the author of 'Naval Gunnery,' "being clearly established, *tight* wads should not be used in *action*, because they increase the difficulty of loading, without doing any good. They may be used before an affair; but, with a view to *quick* firing, the wads used in action should be no *tighter* than is necessary to prevent the charge from shifting when the gun is run out." But in this recommendation Sir Howard might have cautioned the loader as to the manner of entering the wad in the gun: unless the *grummet-wad* be inserted in the piece with the cross bars outermost, the wad, in all probability, will *jam* in the cylinder.

## GENERAL INSPECTION OF GUN-GEER.

PREVIOUSLY to the final removal from the "hulk to the ship," the gunner should remind the senior lieutenant of the necessity\* of inspecting all the gun-geer and implements required for effective service, through the medium of a general muster at quarters.

On this occasion, the sights, together with their covers, should be affixed to the guns, and the ridge-ropes rove and set-up fore-and-aft on the different decks.

PREPARATIONS FOR RECEIVING  
POWDER.

WHEN it is officially intimated to the Ordnance store-keeper that "the ship is ready to receive her supply of powder," the gunner will be required to ascertain, at the store-keeper's office, the exact hour, and particularly the time of *tide*, the powder-hoy will be directed to depart the wharf. When this is ascertained and reported to the senior lieu-

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\* The necessity of this practice must be manifest to every officer who has experienced the annoying cry of "missing" or "misplaced."

tenant, that officer will caution the signal midshipman to keep a watchful eye on the mouth of the harbour, in order that timely notice may be given of the powder-hoy's\* approach to the ship.

Independently of the report of the master-at-arms, the gunner should personally inspect the galley grates, and satisfy himself that every spark be extinct before the powder-vessel be permitted to come along-side. The same injunctions,† touching magazine-men and half-wetted swabs, are to be observed, as already mentioned, under the head of *General Directions*.

#### INDENTING.‡

THIS duty is too often delayed. Ships before now have been *prevented* putting to sea in consequence

\* The powder-hoy invariably carries a distinguishing flag.

† "The utmost care must be taken of the metal-line barrels in which the powder is packed. These should be brought under the ports abreast of the hatchway nearest to the magazine which is to receive them. Either dry swabs, mats, or cushions, made of bread bags, stuffed with oakum, should be prepared, and the packages landed thereon; thus preventing their being injured, which happens when they are heavily lowered on the decks. These packages are to be carefully removed to the magazine, and never to be tumbled or rolled along the decks."—*Naval Instructions*.

‡ "The indents supply accounts must be carefully examined, in order to ascertain, before the ship leaves the port, that every article inserted therein has been actually received; and it is to



of warrant-officers leaving this service to the last. The gunner should be prepared to perform this duty the moment the powder is shipped.

#### SCALING GUNS.

THE guns are to be scaled before they are loaded for service.—Vide *Regulations*.

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be understood, that if any of the boats' oars, or other stores allowed for harbour-service, be taken to *sea*, the value of the same will be charged against the warrant-officer's pay."—*Naval Instructions*.

## WEIGHT OF GUNS AND CARRIAGES.

Pounders.	Weight of Guns.			Weight of Carriages.			Total.		
	Cwt.	qrs.	lbs.	Cwt.	qrs.	lbs.	Cwt.	qrs.	lbs.
6	20	1	0	2	3	24	23	0	24
9	25	2	10	3	3	0	29	1	10
12	32	0	0	4	3	0	36	3	0
18	36	0	0	5	2	0	41	2	0
24	47	2	0	6	3	0	54	1	0
32	49	0	0	8	0	0	57	0	0
32	54	2	0	8	2	0	63	0	0
32	63	0	0	9	1	0	72	0	0
<b>WEIGHT OF CARRONADES AND SLIDES.</b>									
12	6	1	0	3	0	0	9	1	0
18	10	1	0	4	1	14	14	2	14
24	13	1	20	5	2	0	18	3	20
32	17	3	0	6	2	14	24	1	14
42	22	3	0	7	2	0	30	1	0
68	36	0	0	10	0	0	46	0	0
<b>GUN-CARRONADE.</b>									
68	50	2	0	9	3	20	61	1	20

## IN PORT.

## GUNS UNSHOTTED.

GUNS should never be kept *shotted* in port. Though the practice of drawing the shot from guns previously to entering port is generally observed in the service, the gunner should bear in recollection, that instances stand on record in which serious accidents have occurred from ships neglecting to adhere to this caution.\*

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\* The author recollects an instance in which an accidental shot levelled a stack of chimneys in the vicinity of the Cove of Cork; a spark from the armourer's forge, which was at work in the waste, was said to be the cause of the gun's discharge.

Luckily, the proprietor of the premises did not regard the accident in the light of an injury. In Ireland, doors and windows are frequently considered as legitimate channels for the egress of smoke. The captain of the ship immediately sent artificers to repair the damage done, an act considered on the part of the tenant

### RUNNING IN AND OUT LOWER-DECK GUNS.

WHEN the service and the weather will admit, the morning and evening-movements of "running-out, and in," the lower-deck guns should be strictly observed. By this practice the men become acquainted with the weight of the gun, and expert in disengaging and securing its geer. Preparatory to "running out," the gunner should ascertain, from the senior lieutenant, whether it be required to make the movement.

### TRUCKS TAKEN OFF.

"THE dirt which unavoidably collects, from bad weather, wet, &c., about the axle-trees and trucks of the guns on the upper-decks of all ships, and particularly in flush-deck vessels, is very great. Although they are swabbed and swept, yet it seldom happens that the trucks are taken off to clean—a precau-

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a "great honour and condescension," and, in reply to the captain's message, begged that the bearer might tell his honour, "that his honour was too dacent intirely;" adding, "and it isn't his honour that need be unasey atall, atall, for that the smoke oft'ner *wint out* o' the *dour* than *up* the chimibly." Mr. Bull would have acted very differently, and talked about "damages," and "the law."

tion which is strongly recommended to be attended to.”\*

CAUTION—Trucks should never be scraped.

### SPARE BREECHINGS.

WHEN breechings are “condemned,” or returned as defective, the gunner should be careful to reeve the spare ones, supplying the place of the latter with the “*last drawn*,” so as always to keep the *newest* rope in reserve. Spare breechings should be stopped in round coils, and traced-up to small staples inserted in the deck, immediately over the breech of the gun.

### CLEANING ARMS.

It frequently happens that this duty, which is so sedulously observed at sea, is totally neglected in port. This is ascribed to the intervention of dock-yard and other unavoidable duties. The fault will fall upon the gunner if arms be permitted to rust in port. Half an hour can always be devoted twice in the week.

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\* It is recommended to keep traced up over head upon the several decks a few spare trucks.

## PROFESSIONAL INSTRUCTION.

WHEN the services of the gunner can be spared, and when the ship be not immediately "fitting," the gunner is strongly recommended to obtain, as often as possible, the commanding-officer's permission to visit the "Excellent," or such other ship as may be selected in the port, for the purpose of giving instruction, and affording facilities for practice, in the important art of gunnery.

In order that no improper use may be made of the leave of absence granted under this plea, the applicant should be compelled to bring back with him, from the commanding officer of the ship of instruction, a certificate of his presence there, and of his attention to those subjects of science taught in the vessel.

## A T S E A.

## DAILY INSPECTIONS.

MORNING.—The gunner should closely inspect the guns on the different decks, the geer, and rigging of the main-mast\* and main-yard, and report severally their state and condition to the officer of the morning-watch.

EVENING.—He should see that the passages leading to each magazine be free from obstruction, and perfectly clear for passing powder; that the spare gun geer, furniture, and implements under his charge, be all at hand, and ready for immediate use.

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\* In this inspection, attention is particularly directed to eyes of the lower-rigging, mast-head-slings, cat-harpen legs, trusses, lifts, quarter-blocks, and running geer of the main-sail. Nor should the laniards of the lower-rigging be forgotten.

He should also see that the *life-buoy* attached to the stern be primed, cocked, and fit for service; and that the relieving-tackles (should the top-sails be treble-reefed) be placed in the gun-room, preparatory to hooking.

Upon the completion of these several inspections, he should report accordingly to the senior lieutenant, "at quarters."

#### PERIODICAL INSPECTION OF SHOT.

THE inconsiderate practice of permitting shot to remain for months and months unexamined in the lower lockers, is one which in time of need may be productive of irreparable mischief. The lockers should be cleared at least once in a quarterly cruise; the shot cleansed of rust, and "each nature" passed through their respective gauges, before they be returned below.\*

#### FIRE-SCREENS—GENERAL EXERCISE.

WHEN the ship is at sea, the fire-screens are to be fixed, rolled up, and protected from the weather.

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\* When clearing for action, it should be impressed on the minds of the men, that the shot from the *lower* lockers be not used until those in the racks and combings on deck be expended.



When general exercise is ordered, and powder not used, *wads*, of the proper calibre, are to be handed up in boxes, instead of cartridges, for the several guns; and the magazine-men, each time, should place a separate wad in the box, in order to exercise the powder-man in affording a ready supply.

#### DOUBLE BREECHING LOWER-DECK GUNS.

IN blowing weather with a heavy sea, or even in calm accompanied by a heavy swell, the gunner is cautioned to examine carefully the "working of the lower-deck guns."\* Should the ship labour, or the guns be found to "give" on one movement, or to strain on the other, the circumstance should be immediately made known to the officer-of-the-watch, in order that prompt measures may be taken to double-breech, or rather "frap-in" with the stream-

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\* If the ship be lying-to, it is strongly recommended to hook the sea-relieving tackles, and bouse them as taut as possible, in order that the pressure which the strain of the muzzle-lashing brings upon the ship's side, may, if possible, be eased. In every violent lee-lurch, the side has to resist an inconceivable strain, which becomes more powerful from its simultaneous action. Cleating should never be resorted to—it produces the very effect which it is desirable to counteract. Wedges may be put under the fore-trucks on the lee side, and under the after-trucks on the weather side.

cable, the spare messenger, or hawser, suited to the purpose. The spare messenger will answer for one side of the lower-deck, should the stream-cable be found too unwieldy to work on each side.\*

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\* Every seaman must be sensible of the danger resulting from the breaking adrift of a gun in a gale of wind. In two instances this accident has been witnessed by the author of these pages. The first was in a frigate, during a gale of wind, in the Bay of Biscay. In consequence of having previously split the main-top-sail, the frigate, being deprived of the necessary lofty canvas to steady the ship, became extremely uneasy, and laboured much. The gunner had neglected to examine the condition of the guns ; and just as the officer-of-the-watch had despatched a messenger, directing the former to inspect and report their state of security, the weather-gun abreast of the fore-hatchway drew both breeching bolts, broke away from the tackles, and eventually, after several " sends" between the ship's sides and the combing of the hatchway, by one of which the gunner's mate-of-the-watch lost his leg, and ultimately his life, descended the fore hold, crushing a couple of water butts in the ground tier.

The second instance occurred on board a ship of the line, scudding in a heavy gale of wind, homeward bound from Jamaica. The ship was a fast sailer, and, like most fast sailers, a " heavy roller." The preparatory 'pipe' of " Stand by hammocks!" had hardly escaped the lips of the boatswain, when the second-master, rapidly ascending the quarter-deck ladder, motioned to the first-lieutenant to stop the movement, exclaiming, " A lower-deck gun adrift, Sir! Let me have two or three hammocks, and I'll endeavour to choke the trucks." The hammocks were hastily thrown down the hatchways, when, after a heavy lurch had with fearful force propelled the gun back to its proper port, the second-master succeeded in choking the after-trucks, and the ship was immediately brought to the wind on that tack which left the unsecured gun on the *lee* side. Had it not been for the presence of mind and activity of this officer, the ship must have suffered most serious, if not fatal, injuries.

## SHOT LOOSE IN THE GUN.

It not unfrequently happens that, during a heavy gale, or heavy swell, the rolling motion of the ship causes the shot to loosen in the gun. This is attended with danger, and, therefore, whenever the ship be rolling heavily, the gunner is cautioned to inspect closely the shot in the guns. If a shot be loose in a lower-deck gun, and it be not deemed desirable to cast loose the muzzle-lashing of the gun to "re-ram" the charge, the best method the gunner can pursue, to prevent explosion from the friction of the shot, will be to pour into the vent-hole about a pint of vinegar.

## CLEARING FOR ACTION.

If time will admit, it is desirable that the gunner should go round the several decks, in order that he may see that the implements are properly placed, and the geer in readiness at every gun. He should also be satisfied that the fire-screens be well wetted before he attempts to open the magazine; and that all the passages, through which powder may be passed, or conveyed upon deck, be properly moistened by the application of half-wetted swabs.

**RE-LOADING THE GUNS.**—In every instance of bringing an enemy to action, and particularly when not pressed for time, it is recommended to reload the guns. “Remember the adage,” says the author\* of this recommendation, “The first broadside is half the battle.”

#### GOING INTO PORT.

**HINTS**—Present-use Demands to be made out and signed by the captain—Demands to complete—If annual accounts are due, apply for survey on remains—Demand for powder—Unshot guns—Bend buoy-ropes.

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IN concluding this chapter, it may be necessary to state, that the reason the “**GREAT-GUN EXERCISE**” does not appear in the pages of this work, is solely from the prevailing opinion in the profession that the present Exercise will be considerably abridged and amended in the forthcoming revision of the “**PRINTED INSTRUCTIONS.**”

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\* Captain A. Griffiths.

## PRACTICAL HINTS.

## INSTRUCTION TO SEAMEN.

BEFORE technical phraseology be taught to the seaman, it is desirable he should be made acquainted with the cause and origin of the cannon's form. He should know the reason why the *metal* of the piece is not equally *thick* in all its parts; that, to reduce its weight, the gun is made to taper gradually towards the muzzle; that at the breech, where the effort of the powder is strongest, the thickness of the metal is greatest; that at this part (the breech) the thickness is equal to the diameter of the corresponding shot; that at the first reinforce, where there is less to resist than at the breech, there is less thickness; that at the second ring, where the force is still further diminished, the

thickness is still more reduced ; that at the chace, the solidity of the metal is not equal to that at the second “reinforce;” and that, finally, from the trunnions to the muzzle, the piece gradually lessens in thickness, and consequently tapers in form.

This is all plain sailing ; and were this system of instruction more generally adopted, and made more familiar to the men through the medium of apt and intelligible terms, they would soon see the cause why it is that a line drawn from any part of the breech to the muzzle can never become *parallel* to the line of *bore*. Seamen have an unconquerable aversion to all terms of art which convey not a definite and distinctive meaning ; and therefore it is, that in every system of instruction intended for the sailor, propriety of phrase should be strictly observed.

In the art of gunnery, the words “*centre of metal*,” and “*line of metal*,” are employed as terms of *contradistinction*. Possibly these terms have too long received the sanction of *usage* to be now altered ; but to prevent that mystification which will arise in the mind of the uneducated seaman, care should be taken to explain to him that the term “*centre of metal*” is not applied to

that part of the gun which the sailor would very naturally designate the "*midships*," or spot at which the piece might be poised. This caution becomes the more necessary, because the instructor means, by the term "*centre of metal*," a *line* corresponding with the centre of "the bore," and which line is totally different from that designated the "*line of metal*."\*

## DISPART.

THE dispart, being a piece of metal, placed on the gun to give a line of sight parallel to the centre of the bore, may be placed at will on any part of the top of the gun.

To find the dispart, the following will be found the shortest rule:—Take the diameter of the base-ring, and the diameter of that part of the gun

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\* In these *metallic* terms, the author, on one occasion, witnessed a little ludicrous confusion in the mind of an untutored top-man, who thus muttered to himself:—"How can this be? centre of metal!—in course he must mean the middle of the piece; because, if there is to be a line o' metal, and a *centre o' metal*, one must sartainly mean a *line*, and the tother as sartainly mean a *centre*! or wherever's the use of words, or of giving to things a name as is never intended to go for *nothin'*? But now, I finds, I must convert the *centre o' metal* into *another* line, though there's a *line o' metal* so called afore. I'm blest if the whole bisness isn't a reglar-built pauler!—*line o' metal*! *centre o' metal*! !—and, arter all, the gun's no more nor a mass o' metal from clue to earing!"

where it be desired to place the dispart; take then the difference, and half that difference will be the height of the dispart to be placed on the gun where the lesser diameter was taken.

### ILLUSTRATIVE FIGURES.

SKETCH 1, represents the range of a shot when propelled from a gun elevated at two degrees. The upper line is intended to shew the direction the shot would take if uninfluenced in its flight by the force of gravity\* and resistance of the air.†

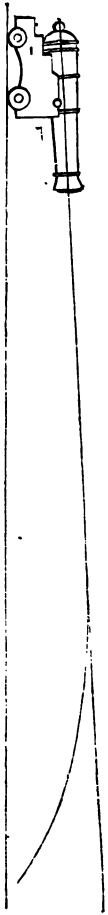
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\* Gravity is the tendency which all bodies have to fall downwards, and acts upon the shot the moment it is fired.

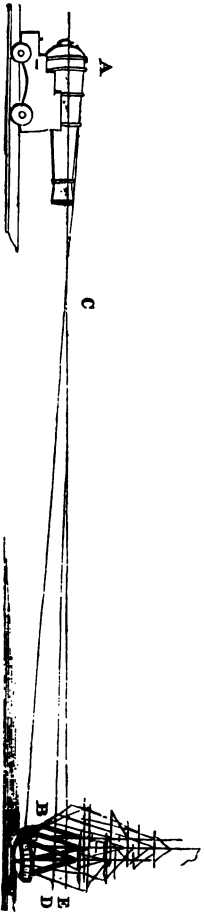
† “To explain the nature of resistance to the flight of shot and shells, it must be remarked, that, in the motion of a ball through the air, no particle of that fluid can be disturbed without moving at the same time a great many others, and not in one direction, but according to that of their contact with those from which their impulse is received. As the moving body passes on, there is left behind a kind of vacuum, more or less complete, according to the degree of velocity. When the ball moves quicker than the air can rush into the space left behind, the vacuum becomes complete. Now there is a certain limit to the velocity with which air can rush into a vacuum,—viz., about 1300 or 1400 feet in a second; and consequently, when the velocity of the ball is greater than this, it is manifest that the resistance must be much increased; for there being then no pressure of the fluid behind the ball, it will have to support the whole weight of a column of the air on its fore part, as well as to give motion to the particles which it strikes; and the air which is before it will be in a very condensed state.

“The effect of resistance is so various, according to the velocity,





Sketch 1.



Sketch 2.



But as the two latter are known to produce a counteracting effect on the shot's course, the curved line will be the *true* direction of the shot at this elevation.

SKETCH 2, is intended to demonstrate the error of taking aim by "line of metal" when the object is at point-blank distance; for, the breech being larger than the muzzle of the gun, it becomes necessary to *lower* the former, and to *raise* the latter, in order to get the notch at the top of the base ring, with that at the muzzle, in one point with the object. This movement, consequently, elevates the gun's axis or line of bore.

From *A*, at the breech, prolonged to *B*, the vessel's hull, is then the line of sight by "line of metal." The marksman following this aim *imagines* his shot will strike the ship at her water line, *B*. The line *CE*, shews the direction of the shot from the axis of the piece; this line, it will be seen,

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diameter, and weight of the projectile, that experiment alone can determine it. If shot could be discharged so accurately to hit a ballistic pendulum at considerable distances, the loss of velocity occasioned by resistance might be easily found; but such a degree of accuracy cannot be obtained, and the ballistic experiments have hitherto only furnished us with results at different distances, *as far* as 300 feet, beyond which, shot cannot be directed with sufficient accuracy to hit the block."—*Sir H. Douglas*.

passes over the object aimed at, the aim being taken by the "line of metal," and will intersect the latter line at *E*, which is the angle of dispart. The line *C E* is the direction the shot would take were it not acted on by the force of gravity and the resistance of the air; therefore the line *C D* is the *true* direction of the shot, and clearly shews that when the marksman takes aim by the "line of metal," at point-blank distance, the shot will pass considerably *over* the object. To this circumstance may be traced the "vulgar error," that a shot *rises* upon leaving the gun. The reverse is the fact. To remedy this error, the dispart, or sight parallel to the centre of the bore, is placed upon the gun.

Sir William Congreve thus explains the principle of the operation of his moveable sights in laying the gun at different angles; and shews that "if the gun were elevated at  $55^{\circ}$ , its muzzle would intercept the sight of the object; for it is evident that, as the muzzle of the gun is elevated, and the breech depressed, by altering the coin or elevating-screw, the sight, which is fixed on the breech, must be raised. To effect this purpose, the requisite quantity is marked on the instrument,

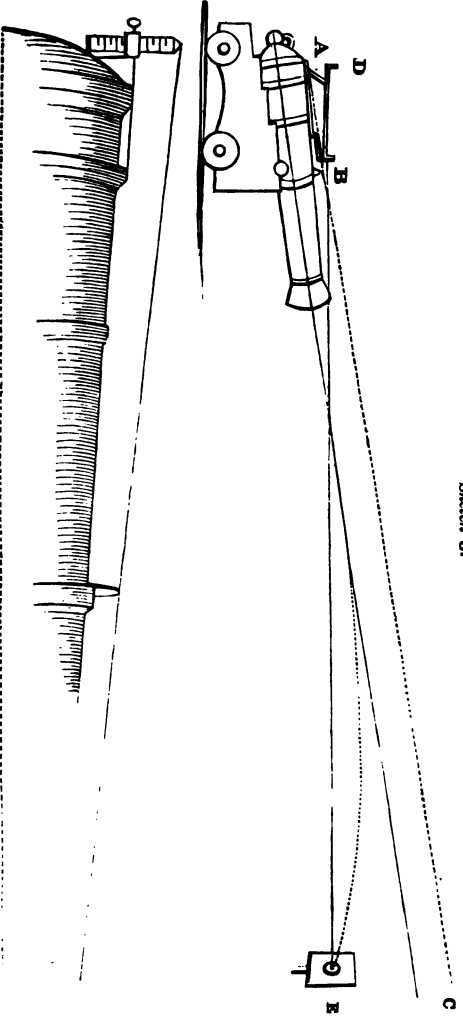


produced, would lose sight of the object  $X$ , and be directed to  $x$  in the air : that  $CD$  therefore may still bear upon  $X$ , its distance from the gun must increase from  $DB$  to  $Db$ , as the gun is elevated ; and the angle  $Da b$ , which the sight makes with the axis of the piece, is always equal to the angle  $aEA$ , the elevation of the gun above point blank, and is therefore in all cases a true measure of that elevation."

SKETCH 3 further exemplifies this subject. For sake of illustration, the dispart\* is placed upon the gun. Now the given object is so distant that, in order for the shot to reach its destination, it becomes necessary to elevate the gun four degrees. Suppose then, (to shew that the dispart is not sufficient for distant purposes,) the gun be elevated four degrees by a gunner's quadrant, that the marksman looks along the breech,  $AB$ , and that this line be prolonged to  $C$ ; it will then be seen that the

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\* The reader will understand, that the dispart is the same as the sight on the gun when down at point blank. Congreve's elevating sight is used for the purpose of getting the object on at a distance when the dispart would be of no avail. Miller's sight, fitted tangent-fashion at the breech of the gun, answers the same purpose as Congreve's elevating sight, and on account of its simplicity is generally preferred ; but the sight of each inventor is yet capable of much improvement.



Sketch 3.

Sketch 4.

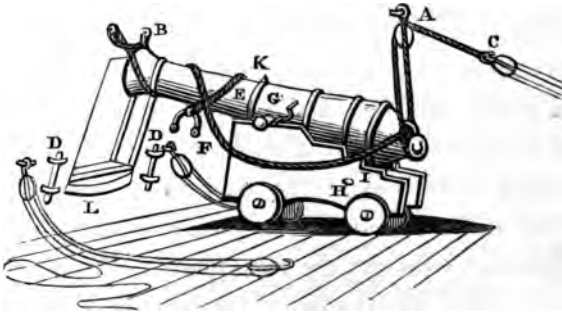




marksman cannot obtain a view of his object ; that the dispart line of sight is considerably *over* it. To obviate this, he has recourse to the elevating sight, and raises it at the hinge four degrees, the angle required for the given distance. The marksman then, as the line *D E* shews, obtains sight of his object. It will be also seen that the sight is not parallel to the bore.\*

SKETCH 4 illustrates General Miller's Tangent Sight.

#### DISMOUNTING.



THE above sketch represents the most expeditious mode for lifting a lower or middle-deck gun from its carriage.

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\* It is said that the French were the first to put this method into practice.

Suppose, for example, the carriage be damaged, and that it be necessary to remove it, and supply its place by another.\* *A* of the figure represents the strap of the runner-block, which is secured over head to a bolt in the beam; *B*, the muzzle lashing; *C*, the upper block of the train-tackle, hooked to the runner-pendant; the lower block of the train-tackle is hooked to a ring-bolt to the other side of the deck. *D*, bolts for shackles of breeching; *E*, breeching thrown over the gun; *F*, shackles of breeching; *G*, cap-squares; *H*, side-loops; *I*, rear-loops; *K*, dispart; *L*, sweep-piece.

Should it be required to lift the gun out of the carriage, and lay it on the deck, the muzzle, like the breech, must be lifted by means of a runner; therefore, two runners of sufficient length to land the gun on the deck will be required.

No. 1, the captain of the gun, gives the word "Elevate," takes out the coin, places the bed, and sees that the gun be squared between the housing bolts; Nos. 3 and 4 pass the muzzle-lashing; Nos. 5 and 6 unshackle the breeching and throw its ends over the gun; Nos. 7 and 8 take out the fore-

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\* It is a matter of surprise that His Majesty's ships are not supplied with spare carriages.

lock and throw back the cap-squares, unhook the side tackles, and see all the geer of the gun clear of the carriage. Handspike-men attend with their handspikes; rear-men provide and hook the runner. No. 2 hooks the train-tackle to the runner. At the word "Dismount," all the Nos., except 3 and 4, together with the handspike-men, man the train-tackle, which becomes the runner-tackle. Nos. 3 and 4 remain until the weight of the gun bears an equal strain on the muzzle-lashing;—the handspike-men stay until their handspikes be no longer wanted; they then man the train-tackle. When the gun is high enough, No. 1 gives the word "Well;" No. 2 takes a turn with the train-tackle, and attends to lower the gun; the other numbers run the carriage back, and bring up another to supply the place of that already removed. No. 2 lowers the gun in the new carriage; Nos. 3 and 4 cast off the muzzle-lashing; 5 and 6 shackle the breeching, and 7 and 8 close cap-squares and hook side-tackles.

#### MODE OF PROVING GUNPOWDER.

To examine powder, the first process is to rub it between the hands for a few seconds, in order to

find whether it contains any irregular or hard lumps. "The second is by blasting about two drachms of it upon a copper plate, and comparing it with the quality of an approved sort. In this proof,\* it should not emit any sparks, nor leave any beads or foulness on the copper."†

Gunpowder should always be of a uniform colour, approaching to that of slate. Good powder should be devoid of smell.

#### WINDAGE.

THE windage of a gun, or howitzer, is the difference between the diameter of the bore and the diameter of the shot or shell. See each nature of ordnance, and the tables of shot and shells.

#### POINT BLANK.

A PIECE of ordnance is said to be laid point blank for an object when the axis of the gun and the object are on the same plane. In other words,

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\* "Gunpowder, exposed for seventeen or eighteen days to the influence of the atmosphere, should not increase materially in weight. One hundred pounds of powder should not absorb more than twelve ounces. If it increase in weight more than one per cent. it is a proof that soluble salts abound in a degree which should warrant the condemnation of the powder." — *Sir H. Douglas.*

† "British Gunnery."

parallel to the horizon. "Hence the point-blank range of a gun, or rather *its range\* at no elevation*, is the distance from the muzzle of the first-graze,† measured upon a plane passing under the trucks and parallel to the axis of the bore."

### ELEVATION.

ELEVATION may be briefly defined as the angle between the axis of the bore and the plane of the horizon.

The elevation of a gun at sea depends upon two considerations, namely, the distance of the object to be fired at, and the heel, or lateral position, of the ship. If the object be within four hundred yards, a shot will strike it when the axis of the piece is laid in a line parallel with the horizon; in such case, if the ship heel either way, it will be necessary, according as the case may be, to elevate or depress the gun corresponding with the angle to which the vessel is inclined. This is too manifest to need demonstration, and it may easily be proved by placing a pendulum, (connected with a graduated arc,) say

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\* The range of point blank is, with the "distant" charge, *i. e.* one-third of the shot's weight, 400 yards.

† Shot's graze.—*British Gunner.*

in the centre of the main hatchway, to denote the angle to which the vessel heels.

#### PENETRATION OF SHOT.

“THE effect of cannon shot,” says Sir H. Douglas, “particularly in naval actions, is always increased, more or less, by the splinters torn off the timber through which the balls penetrate. It is a general rule to use the full charges of powder at the commencement of an action, and to reduce them as the guns become heated. This is a very proper precaution, to guard against accidents in continued quick firing; but a general rule to commence action with the full charges may, in some cases, interfere with the important effect that might be produced from splinters. The prodigious ravages occasioned by splinters, in naval actions, are such, that we should study as much as possible, consistently with other views, to reap the fullest effect from so destructive an agent; and this depends very much upon the degree of velocity with which the balls penetrate.

“*In close action*, shot discharged from large guns, with the full quantity of powder, splinter less

than balls fired from the same nature of guns, with reduced charges.”\*

#### FIRING WITH ROLLING MOTION.

PERIODS of fine weather and smooth water are mostly made available for firing at a mark. It were well, occasionally, to vary this practice, as will be seen by the following observations:—

“ In every case where there is much motion, the shot will not be delivered from the cylinder till its direction is altered, more or less, from that in which the piece was pointed when the trigger was pulled. It is, therefore, important to consider whether it is more advantageous to fire with a rising, or with the falling side; in other words, the weather or the lee roll.

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\* “ This may be familiarly exemplified by firing a musket or pistol, charged with a bullet, through panes of glass, at different distances, or with different charges. Superior velocity will make a clean, round hole, without breaking or even cracking the plate; but a certain reduced celerity will dash the glass to pieces.

“ In firing into masses of timber, or any solid substance, *that* velocity which can but just penetrate will occasion the greatest shake, and tear off the greatest number of, and largest, splinters; for as, in the brittle glass, the parts struck by a ball moving with great celerity, are driven out before they can communicate motion to the adjacent parts of the medium, so, with inferior velocity, the corresponding shakes extend to various distances, and tear the fibres of timber, or disturb the parts of the medium, in various degrees.”—*Naval Gunnery*.

“ A vessel engaging to leeward, that is, fighting her weather guns, must be in the trough of the sea when the side engaged begins to rise ; and whilst it is rising, she must be performing a lee-roll.

“ The disadvantage of firing from the hollow between two waves being manifest, the inexpediency of firing at the *beginning* of the rising motion can be also proved,—for the one ensues immediately from the other ; and a very material objection to the practice of firing *during* any part of the rising motion, comes from this,—that the lee slope of a wave being always more abrupt or steep than the weather-side, the change which takes place in a vessel’s position in making a lee-roll, accelerated and increased by the action of the wind, is much more rapid than in rolling to windward, and, consequently, the direction or elevation of the ordnance would be much more quickly and considerably disturbed in firing with the rising, than the falling motion, in this case.

“ It appears, therefore, that in fighting the weather side, it is preferable to fire at the pause immediately before the commencement of the declining motion, (unless the vessel heel so considerably as to incur danger from the increased action of the recoil,)



because the ship, being then on the top of a wave, will command a better view of the enemy, and the declining motion will be operating to lessen the slope in the direction of the recoil.

“In fighting to windward,” (by this is meant, possessing the weather-gage, and fighting the lee guns,) “some of these arguments are reversed. The declining motion of the side engaged is then a lee-lurch; and, at the commencement of that motion, the vessel must be in the trough of the sea. We should therefore so far modify the maxim already suggested as to fire at the end of the falling motion of the fighting, or lee side, when the vessel comes to the top of a wave, so that the actual discharge may not take place after the pause which attends the change of motion.”

But there are other considerations to be taken into account. “If, in fighting the weather-guns, the ship be heeling under the influence of a strong breeze, her cannon, fired at the commencement of the declining motion, or of the pause which precedes it, will rush in with such violence, from the inclination of the deck being in the direction of the recoil, that the breechings and ring-bolts will frequently be incapable of resisting so severe a

shock, particularly when the guns are loaded with two shot. In such cases, consequently, the ordnance should not be fired until the declining motion be partly performed.

“ It follows from what has been advanced, that shot intended to take effect on the hull of an enemy should rather be discharged with a *falling*, than with a rising side; but that such pieces as may be appointed specially to act against the masts and rigging should, on the contrary, be fired with a rising motion, the aim being taken low.”\*

Possibly the foregoing observations may be disputed; but the only way to ascertain their correctness will be to put them to the test of practice. For this reason it is strongly recommended to make experiments in calms with a heavy swell.

#### SHELLS DISCHARGED FROM GUNS.

Few naval gunners are acquainted with the manner of discharging a shell from a gun. The shell should be fastened by tin straps to a wooden bottom—a hole is made in the end of the rammer to admit the fuse, and the shell is thus forced home upon

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\* “ Naval Gunnery.”

the cartridge, but not *struck* in the same manner of ramming home wad and shot. The wooden bottom serves the purpose of the wad. If a wad were used the fuse might not *ignite*.

### MORTARS.

MORTARS are generally fired at 45° of elevation, and the required range regulated by varying the charge of the powder; but the greatest range experience proves to be obtained by a lower elevation.

LOADING.—The required quantity of powder is first put into the chamber of the piece, and the shell being loaded, and the fuse fixed, is placed in the mortar by means of hooks,—the fuse being *outwards*,\* or towards the muzzle of the mortar.—The mortar is pointed by means of two pickets, which shew the direction of the object, and the

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\* A curious piece of artillery practice was lately exemplified on board one of His Majesty's steam vessels-of-war upon the occasion of "*trying*" the effect of a shell fired from one of her guns. The enlightened gunner thought proper to enter the fuse of the shell *foremost* into the muzzle of the piece, not conceiving it possible the fuse could ignite entered in any other position. The shell was discharged—not so the *gunner*—man-slaughter not having ensued.

piece is fired by the application of a match or port-fire, the explosion igniting the fuse.

CAUTION.—Before entering the shell into the piece, the bottom of it should be wiped well with a sheep skin.

HOWITZER.—The howitzer is a species of mortar, mounted in the manner of a gun, for discharging shells &c. from the position of point blank, to the elevation of  $12^{\circ}$ . Large howitzers resemble carronades in their internal construction. The chambers of those of a small calibre are not so large in proportion to their bores. Howitzers are pointed *in the same manner as guns*.

## RANGES OF NAVAL ORDNANCE.

NATURE OF ORDNANCE Length, Weight, &c.	Description of Charge.	Point Blank.	DEGREES OF ELEVATION.					
			1°	2°	3°	4°	5°	6°
32-pounder, 9 ft. 6 in. } 56 cwt. .... }	Distant } 10 lbs. 10 oz. }	Yards. 400	Yards. 725	Yards. 1125	Yards. 1425	Yards. 1710	Yards. 1890	Yards. 2090
32-pounder, 9 ft. 6 in. } 56 cwt. .... }	Full } 8 lbs. }	345	625	1005	—	—	—	—
32-pounder, 8 feet ... } 49 cwt. .... }	Distant } 10 lbs. 10 oz. }	295	595	960	1285	1555	1715	—
32-pounder, 8 feet ... } 49 cwt. .... }	Full } 8 lbs. }	290	568	895	1000	—	—	—
24-pounder, 9 ft. 6 in. } 50 cwt. .... }	Distant } 8 lbs. }	395	695	1025	1350	1600	1790	2000
24-pounder, 9 ft. 6 in. } 50 cwt. .... }	Full } 6 lbs. }	335	555	995	1205	1465	1585	—
24-pounder, 7 ft. 6 in. } Congreve's, 40 cwt. }	Distant } 8 lbs. }	375	690	990	1355	1558	1698	—
24-pounder, 7 ft. 6 in. } Congreve's, 40 cwt. }	Full } 6 lbs. }	318	598	895	—	—	—	—
18-pounder, 9 feet ... } 42 cwt. .... }	Distant } 6 lbs. }	297	657	1015	1355	1548	1727	—
18-pounder, 9 feet ... } 42 cwt. .... }	Full } 4 lbs. 8 oz. }	258	574	934	—	—	—	—
12-pounder, 8 ft. 6 in. } 32 cwt. .... }	Distant } 4 lbs. }	295	698	910	1180	1395	1575	1800
12-pounder, 8 ft. 6 in. } 32 cwt. .... }	Full } 3 lbs. }	—	—	—	—	—	—	—
9-pounder, 8 ft. 6 in. } 25 cwt. 2 qrs. 10 lbs. }	3 lbs.	297	680	899	1195	1390	1620	1800

*Note*—It has been recommended, unless the object be close, to allow  $\frac{1}{2}^{\circ}$  elevation for gravity and resistance of the air, when firing at point-blank distance.

### LANDING AND EMBARKING HEAVY ORDNANCE IN A SURF.

To lessen the difficulties and danger consequent upon the *usual* mode of transporting artillery, in open boats, Mr. Cowe, the boat-builder of Woolwich dock-yard, has suggested a safe and serviceable system, by which means, heavy ordnance may be conveyed from the ship to the shore, or shore to the ship, at periods when the surf on the beach would prevent the possibility of deeply laden boats approaching the shore. To effect such services, the projector of the plan employs the ship's launch, fitted with the windlass and trunks already "allowed" for the purpose of weighing anchors.

The gun is thus prepared for landing :\*—

A pair of gun-slings is clapped on in the usual way—a single rope,† about seven inches in circumference, is made fast round the middle of the gun, or position best calculated to poise the piece. It is then removed from its carriage, and placed on a cradle or sledge. Should this sledge not be previously prepared, it may be made of any piece of timber that can be readily procured ;—the spare-anchor stock cut ‡ asunder, re-

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\* The author has been compelled to abridge Mr. Cowe's directions.

† This rope is called by the inventor the heaving-up rope.

‡ Query, parted.

versed, and the two small pieces brought and bolted together, hollowing out the upper part to the form of the gun, will answer perfectly well: the bolts which fasten the *two parts* of the sledge, will serve to pass the lashings round the gun in the cradle. That end of the sledge which is intended to go foremost should be rounded away, so as to rise over any impediment it may meet with on the ground. A strong rope is then fastened under the *muzzle* of the gun, for hauling it on shore.

Small lines are to be fastened to the muzzle and breech, to keep the gun steady—those lines\* are to be marked, so as to indicate when the gun is in a fore and aft direction.

The muzzle and breech should be padded with swabs or mats, to prevent injury to the bottom of the boat.

The gun, thus prepared, should be hoisted out by the gun-slings, in the usual way, and lowered sufficiently into the water; the heaving-up rope is then to be rove up through one of the trunks, and brought to the windlass; and when the weight of the gun is on the boat, it should be disengaged from the purchase †

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\* These lines should be small, just sufficient to steady the gun, for this reason:—Should it happen, from any cause that cannot be foreseen, that the rope which heaves the gun up slips or gives way when the steadying lines are made fast, the gun would swing out, bringing the whole weight on the gunwale of the boat.

† The professional reader will perceive that the inventor's directions are not always sufficiently practicable for the seaman to follow, and therefore care must be taken that the slings of the gun be long enough, or that some ready method be adopted to disengage the purchase from the gun so soon as *the trunk-rope* receives its weight.

which hoisted it out, and hove as close as possible up to the bottom of the boat.

In order to relieve the windlass, the second gun should be hove up to a piece of timber, or three capstan-bars lashed together, and placed across the boat. A stopper should then be made fast to the heaving-up rope, and fastened to the bars—the rope round the windlass should be slacked-up, and the first gun will be suspended by the capstan-bars.

A mouse or knot should be worked in that part of the heaving-up rope which is nearest the windlass, to prevent the stopper from slipping. The lines for steadying the gun are made fast to the gunwale of the boat.

A seventy-four-gun ship's launch, with one iron twenty-four-pound gun suspended, heels only eight inches, therefore it is in perfect safety. The second gun, when suspended, brings the boat upon an even keel.

When both guns are secured, the carriages and stores should be placed in the boat in positions to avoid impeding the people pulling at the oars. On approaching the shore, care must be taken to bring the boat to an anchor well without the surf; for should the guns be allowed to touch the ground whilst suspended, they would inevitably stave the boat's bottom. The depth of water should determine at what distance from the shore the boat should be anchored. Should there be a sufficient number of men\* ready on the beach to haul the gun up, the only communication necessary would be a small line, by which the large

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\* Forty men have thus drawn an iron twenty-four pounder up a rough causeway.





hauling rope might be conveyed on shore ; men or horses may then be attached to the rope.

Should the operation be carried on where there is a rise and fall of tide, and the guns be not immediately wanted, it will be only necessary to take the boat in at high water,\* and drop the gun until the tide leaves it.

WHEN EMBARKING THE GUN, the boat must be anchored well without the surf, and care taken that the anchor be sufficiently heavy† to withstand the weight of the gun, and the impediments it may meet with when “heaving off.”

The gun is prepared in precisely the same manner as for landing, and placed as near the water’s edge as possible. The rope for heaving it off should be conveyed to the stern of the boat ; and should there not be a sufficient number of men to haul it off by hand, it must be brought to the windlass, and hove off by that purchase. It is here proper to notice, that the windlass is only secured for a perpendicular strain, and if this rope be brought to it direct from the stern of the boat, the strain would be horizontal ; to obviate which, an eye bolt is driven through the boat’s bottom, directly under the windlass, to which a leading-block should be hooked ; the rope must be rove through‡ it,

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\* For reasons which must be manifest to every seaman, high water is the time of tide best suited to beach artillery.

† In addition to the inventor’s caution, it is here recommended not to trust solely to the stream-anchor in heaving off a heavy gun.

‡ The reader will perceive that, though there be a block attached to the bottom of the boat for the purpose of acting as a fair-leader, and bringing upon the windlass a perpendicular strain, the inventor

and then brought up to the windlass ; by doing so, the strain is kept perpendicular.

Twenty-nine men have hauled by hand a twenty-four pounder from the water's edge to the stern of a boat moored about thirty fathoms from the shore.

The heaving-up rope and the steadying lines are to be attached to the heaving-off rope, so that they may be got at when the gun is under the stern. When the gun is as close as possible to the stern of the boat, the heaving-up rope should be rove through the trunk and brought to the windlass ; the cable to be slackened until the boat be directly over the gun, when it should be hove up and secured as for landing. The second gun is got off in the same manner, when the boat may proceed to the ship and deliver them.\*

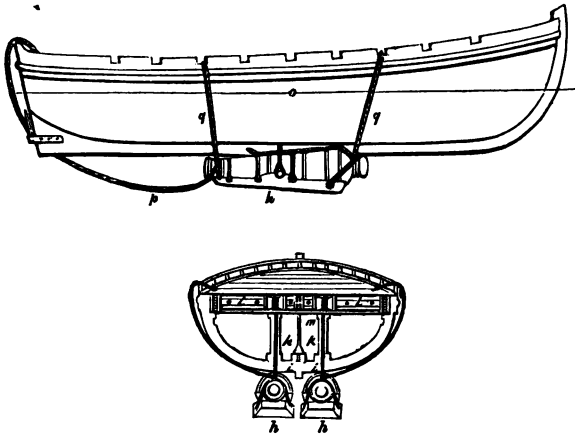
The advantages gained by this mode of landing and embarking guns are—Expedition in accomplishing the object, without endangering the boat or men—Performing such service at a period when it could not be effected by the usual means,—and that, after landing the guns, the boat is ready for any other service, by being *kept afloat* beyond the surf.

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has devised no method by which the heaving-off rope from the shore is to be rove through the block secured to the keel. It will therefore be necessary, to prevent *diving* for the purpose of pointing the end of the rope through the block under water, to reeve previously a small *leading* line through the trunk and through the block at the keel, bringing up the under end *in-board*, ready to bend on to the “pointed end” of the heaving-off rope as soon as it reaches the boat from the shore.

\* Attention will be required in clearing the gun from the boat's bottom, as also in hooking or toggling the purchase by which it is to be hoisted into the ship.

## GUNS SECURED TO BOAT'S BOTTOM.



EXPLANATION OF FIGURES.—An elevation and midships section of a seventy-four-gun ship's launch, with two thirty-two pounders suspended from the windlass; *h h h*, the guns lashed on wood slides; *i i i*, the heaving-up ropes by which the guns are hove up to the boat's bottom; *k k*, water tight removeable wood trunks, through which the ropes pass to the windlass; *l l*, the windlass in two parts, connected by a wrought-iron gudgeon and socket; *m*, a small removeable stanchion, which supports the middle of the windlass; *o*, the line of flotation, when there are two thirty-two pounders suspended, their carriages, ammunition, stores, and twenty men in the boat; *p*, the rope by which the gun is hauled on shore when landing, and off the shore when embarking; *q q*, guide ropes, to steady the guns when under the boat's bottom.

## PURSER.

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### PRELIMINARY REMARKS.

It will not, at present, be necessary to enter into any minute detail respecting the duties of this officer, inasmuch as it is expected that the Admiralty Instructions, relating to the purser, will shortly undergo a revision. In some general points, however, which no contemplated modification can possibly affect, the present work will present a few hints. Tables, worthy of the purser's attention, are subjoined to this chapter.

As the office of Judge-Advocate occasionally devolves on the purser, some hints are given, in the following pages, for his general guidance in this important duty.

## GENERAL DIRECTIONS.

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### S Y S T E M.

THE maintenance of system should be the principal study of the purser. Although this officer is not regarded in the light of an executive, he should be impressed with the belief that order and regularity are as essential in the execution of every service connected with his department, as that of any other on board of a vessel of war.

Unless the purser previously consult with the senior lieutenant upon the contemplated execution of duties connected with his office, not only will the public service suffer inconvenience, but, in nine cases out of ten, that friendly feeling which should

subsist between these two officers is sure to be disturbed. The purser is, therefore, counselled to obtain from the senior lieutenant the precise period which he may deem best suited to the reception on board of the several supplies demanded.\* Such precaution will prevent misunderstanding and materially tend to promote despatch.

#### CUSTODY OF PROVISIONS.

THE purser is required to communicate constantly with the master, touching the order, state, and preservation of the provisions and victualling stores, and particularly to commence his issue of supplies with those which will be most liable to decay, or which may bear marks indicating the oldest date. Vide *Master*.

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\* It has frequently happened that, from neglecting to consult with the senior lieutenant as to the time best suited to the reception of supplies, provisions have been sent along-side of the ship at a period when the crew has been employed in the execution of pressing service, and which, from its importance, precluded the possibility of postponing its performance. Indeed, before now, impatient and *miscalculating* pursers, regardless of every other consideration but that of "*completion*," have despatched a plentiful supply of *coals* to the ship during the period in which the senior lieutenant had been sedulously occupied in the *interesting* act of *painting* the vessel. Under such circumstances, pursers need not be surprised if less of anxiety be evinced for the *delivery* of the coals than for the preservation of the paint.

## SECURITY OF SPIRITS AND WINE.

ALL casks containing wine and spirits should be well-examined, on their arrival along-side in the lighter.\* The purser should use every exertion to stow under hatches all liquors and wine, before *night-fall*; and should circumstances preclude the possibility of striking such casks below in the hold, he should apply to the commanding-officer, to place a sentinel in charge of whatever wine and spirits may remain on deck after dark.

## STEWARD-ROOM—SERVING PROVISIONS.

THE purser should consider himself responsible for the state and condition of the steward-room; and never permit provisions to be served at any other periods than those which the custom of the service prescribe. He should, also, enforce the most rigid observance touching the care of lights. It is the duty of the purser to inspect the steward-room daily, and to submit to the captain, or commanding officer, any suggestion which may tend to prevent foul effluvia below.

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\* To the purser this examination is of the first importance. As "leakage is not allowed," he should look to the allowance contained in the cask.

### BREAD-ROOM—CONDITION OF THE BREAD.

ON no account is the purser to “start the bread” or stow it in bulk without the especial commands of his captain. And should the bread at any time appear to be damp, he is to consult his superior as to the propriety of drying the biscuit upon deck. Some officers are opposed to this practice, asserting, that exposing biscuit to the sea air injures its preservation. Indeed, many advocate the necessity of keeping this article of food closely confined. But if bread be damp, or in any way damaged by leakage, the defective bags should be immediately separated, and a survey held upon their condition.

### COALS FOR THE FORGE.

UPON proper application from the carpenter, the purser is required to supply coals for the use of the forge. The quantity consumed should be noted in the log, and the purser should procure from the carpenter receipts for coals so supplied.

### LIGHTS AND LANTERNS.

THE purser should always have a proper supply of lanterns prepared for the execution of duties



which need the assistance of light ; and he will do well to consult with the senior lieutenant as to the number of lanterns which should be severally assigned for the use of the different decks. In ships of the line, and, indeed, in all ships, it is advisable to have the working lanterns lettered and numbered, in the following manner : — M<sup>n</sup> D<sup>k</sup>, N<sup>o</sup> — ; M<sup>d<sup>1</sup>c</sup> D<sup>k</sup>, N<sup>o</sup> — ; L<sup>r</sup> D<sup>k</sup>, N<sup>o</sup> — ; Orlop, N<sup>o</sup> — ; B<sup>n</sup>'s Mate, N<sup>o</sup> — ; Q<sup>r</sup> Mast<sup>r</sup>, N<sup>o</sup> — ; Serj<sup>t</sup> M<sup>rs</sup>, N<sup>o</sup> — ; M<sup>r</sup> at Arms, N<sup>o</sup> — ; and Ship's Corp<sup>l</sup>, N<sup>o</sup> —.

By this mode of labeling, lanterns are not so liable to “ill-usage,” or to come in awkward collision with an *unfriendly* foot. And here may be made the remark, that a paucity of candles neither benefits the public service nor the private individual.\*

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\* It was the constant practice of an officer of this grade, well known in the service by the *soubriquet* of “the prince of pursers,” to call for *more* lights when any particular duty required an extraordinary muster of lanterns upon deck. Upon striking top-masts, veering cable, transporting provisions, or clearing boats, the “prince” was the first to “fall foul” of his steward, for what he was *pleased to consider* and term “deficiency of lights.” This *enlightened* liberality was not lost upon the mates, mids, nor yet the fore-mast men ; the latter of whom would frequently ejaculate — “We wants no more, Mr. R——s. Lord bless you, Sir! *we've* lights enough for more nor double the work.”

It is needless to add, that human nature was a favourite study with the “prince.”

**SIGNAL LANTERNS.**—This officer will do well to ascertain, from the superintendant of the dock-yard, whether, in the supply of signal lanterns, it be required to follow any *particular* form. This is essential, as *established* forms perpetually vary! He should constantly inspect these lanterns, in order that he may satisfy himself they are perfectly fit for service.—Vide *Signal Midshipman*.

**FIGHTING LANTERNS.**—The purser is required to furnish a lantern for each gun, and opposite fore and aft, at the several quarters. These lanterns should be lettered and numbered according to the deck and gun to which they immediately pertain, and should never be removed from the fixed position over the port.

It is not customary in the navy to place candles in the fighting lanterns until lights be required for actual service. Prudential motives support the practice. When the fore-mast men are short of lights below, they not unfrequently *shorten* the allowance aloft and *lighten* the socket of its load. But it is the duty of this officer, at evening quarters, to see that a proper supply of candles be in perfect readiness to place in the fighting-lanterns at a moment's notice. A tin case, containing the number of

candles required for each deck, suspending the case in a position of ready access, will answer the desired purpose. The cases should be kept locked, and their respective keys given in charge of the sentinels planted on the different decks.

In well-regulated ships, the lantern-men are exercised in supplying candles for the lanterns. In ships of an opposite character, the exercise is *reversed*.

#### PRESENTATION OF ACCOUNTS FOR CAPTAIN'S SIGNATURE.

WHENEVER accounts are presented to the captain for signature, the purser is cautioned to allow his commander sufficient time to examine them. Signatures to official documents are not to be affixed in haste.

## IN PORT.

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### VICTUALLING THE SHIP.

IT is the duty of this officer to obtain from the captain the exact period for which to victual the vessel, and to specify in the "Demand" the required quantity of each particular supply. It may be necessary to complete the bread to three months, the cocoa to two, and the flour to a fortnight only. These are considerations too often overlooked.

### SUPPLY OF FUEL.

THE want of fuel becomes a serious deficiency to a vessel of war. The purser should never permit the ship to be short of wood, or coals; and, whenever he may have occasion to replenish his stock,

he should intimate the circumstance to the captain, or commanding-officer — such intimation comes with a better grace from the purser than from the master.—Vide *Master*.

#### USE OF SHIP'S BOATS.

A WELL-TIMED application will always ensure to the purser the service of a boat, to convey supplies from the shore to the ship. This officer should always be spared the expense of *hiring* boats on public service.

## WEIGHT OF PROVISIONS, AND

SPECIES OF PROVISIONS.	Contents of each cask, &c.	Tare of each cask, &c.	Casks.	
			Length.	Diameter.
	lbs.	lbs.	Inches.	Inches.
Bread, in Bags.....	112	2	—	—
Beef, Irish, in Half Puncheons	304	60	31½	25
Barrels.....	208	42	28	21
Pork, Irish, in Half Puncheons	320	60	30	25
Barrels.....	208	42	27	21
Flour, in Hogsheads .....	560	86	36	28
Half Hogsheads.....	280	45	27	22
Barrels .....	360	52	30	24
Suet, in Barrels .....	280	52	30	24
Half Hogsheads.....	180	45	27	22
Raisins, in Barrels .....	386	60	30	25
Half Hogsheads.....	224	44	26	22
Sugar, in Hogsheads .....	560	100	35	28
Half Hogsheads.....	260	66	28	22
Barrels.....	372	77	30	25
Cocoa, in Hogsheads .....	386	86	36	28
Half Hogsheads.....	150	45	27	22
Barrels.....	224	52	30	24
Tobacco, in Barrels.....	150	52	31	24
Half Hogsheads.....	100	45	26	23
Butter, in Firkins .....	65	14	17	14
Cheese, in Casks.....	120	30	29	18

## DIMENSIONS OF CASKS AND PACKAGES.

SPECIES OF PROVISIONS.	Contents of each cask, &c.	Tare of each cask, &c.	Dimensions.		
			Length.	Diameter or Breadth.	Depth.
	lbs.	lbs.	Inch.	Inches.	Inch.
Tea, in Cases .....	180	126	39	25	25
Half Cases .....	105	90	39	24	16
Quarter Cases ...	60	58	39	16	15
Soap, in Cases.....	224	45	33	17	17
Half Cases.....	112	28	26	16	13
Lime-juice, in Cases .....	72	110	32	18	14
Peas, in Hogsheads .....	60	86	36	30	
Barrels .....	40	52	32	24	
Half Hogsheads	28	45	27	23	
Oatmeal, in Hogsheads...	92	86	36	28	
Barrels .....	60	52	31	24	
Half Hogsheads	40	45	26	23	
Vinegar, in Hogsheads ...	63	100	35	28	
Barrels .....	45	77	31	24	
Half Hogsheads	32	66	26	22	
Spirits, in Puncheons.....	84	128	40	30	
Hogsheads .....	63	100	35	28	
Barrels .....	42	77	32	25	
Half Hogsheads	32	66	27	22	
Wine, in Pipes .....	126	165	52	33	
Puncheons .....	84	128	40	30	
Hogsheads .....	63	100	35	28	
Barrels .....	42	77	32	25	
Half Hogsheads	32	66	27	22	

## NAVAL JURISPRUDENCE.

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A NAVAL court-martial is one of the fairest tribunals in the world; but, like all human institutions, it has been injured by the gradual abuses of time. At present, our naval judicature is beset by several anomalies, which not only perplex its proceedings, *but* render them in danger of being invalidated.\*

These anomalies arise chiefly from the frequent revisions and changes in the “*Naval Instructions*,” and “*Regulations for His Majesty’s Service at Sea*,”

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\* There are several instances where the informalities and illegal proceedings of courts-martial have been severely censured by the Legislature, as well as brought under the cognizance of the civil courts; and the members composing the court have, individually and collectively, become amenable to the laws of their country. Naval and military courts-martial are subject to the control and jurisdiction of the supreme courts of King’s Bench and Common Pleas.



while the Act of Parliament, to which such instructions must be subservient, *remains unaltered*, since the 19th of George III! That glaring discrepancies should ensue, from such *shifting* on the one part, and immobility on the other, is manifest; and it is equally clear, either that informalities in the proceedings of a court-martial must often occur, or that the course of justice must be as often impeded.

For example :—Within these few years, commanders, or “second captains,” of ships of the line have been *permitted* to sit at courts-martial in preference to junior officers of the same grade in *command* of sloops of war. Now Section XIV. of the Act of Parliament states that—

“In case any court-martial shall be appointed to be held at any place where there are no less than three, nor yet so many as five officers of the degree and denomination of a post-captain, or of a superior rank, to be found, then it shall be lawful for the officer, at the place appointed for holding such court-martial, who is to preside at the same, to call to his assistance as many of the commanders of His Majesty’s vessels, under the rank and degree of a post-captain, as, together with the post-captains then and there present, will make up the number of *five*, to hold such court-martial.”

When this Act was framed, the legislature evidently meant by the term "*Commander*," the officer of that grade in actual *command* of one of His Majesty's sloops, not a commander being in the same ship under a *post captain*, for such an officer was then unknown, or even contemplated; to say nothing of the important clause mentioned in another section of the same Act, touching the assemblage of five vessels of war, which clause clearly shews that the *legislature* intended that five persons in *superior* command, in rank not below that of the commander, were necessary to constitute a naval court-martial.

In the last revision of the "Regulations for His Majesty's Sea Service," the following article appears in the chapter entitled "Courts Martial."

"A captain in command of a sloop-of-war, notwithstanding his *temporary* loss of rank in other respects, is to sit at courts-martial according to his rank on the list of captains; and *commanders*, acting in the temporary *command* of His Majesty's ships, shall be considered liable to *sit at courts-martial*, according to their respective ranks. Lieutenants shall not be permitted to sit as members at courts-martial, although they may be acting in the *temporary* command of ships."\*

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\* This article remains the same as that which appeared in the code issued in 1816.

The paragraph above cited is the only passage which appears in His Majesty's "Regulations" relative to rank and precedence at courts-martial.

The stress that appears to be laid upon the words *command*, and *temporary command*, of His Majesty's ships, as particularly applicable to captain and commanders, is sufficient to shew that the revisers of these regulations could never have contemplated that commanders serving in the *same* ship with captains were eligible\* to become members of a court-martial.

To prevent the possibility of officers giving different versions to the various sections in the statute which was intended by the Legislature to guide and govern the proceedings in every case of a naval court-martial, and particularly to remove, in some measure, those penal liabilities to which the members composing a court may, collectively and individually, be subjected by the misconstruction of an ambiguous Act of Parliament, it may be necessary to remodel the statute, and amend those sections which, in many instances,

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\* An instance has recently occurred, where an officer was dismissed His Majesty's service by the sentence of a court-martial composed in a manner at variance with the 19th section of the Act of Parliament. This officer has since been reinstated.

have puzzled and perplexed\* the best crown lawyers this country has ever produced.

#### DUTIES OF A NAVAL JUDGE-ADVOCATE.

THE duties required to be performed by the Naval Judge-Advocate are frequently delegated to the purser, and therefore it is highly essential that this officer be not only sufficiently versed in all matters connected with the legal forms of the court, but that he should also be possessed of a competent knowledge of what is technically termed the Law of Evidence, and the forms of Courts of Civil Judicature. This is an indispensable knowledge, because it often happens that, in consequence of the silence of the Act of Parliament and the Naval Instructions upon the subject at issue, disputed points arise, which can only be decided by the customary

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\* The celebrated Mr. Cust, counsel for conducting the affairs of the Admiralty, in "answering a case" laid before him, thus concludes his legal opinion:—"It is a misfortune that the Act, which was made for reducing former Acts of Parliament into one, should be imperfect, and defective in directions concerning courts-martial."

"The variety of constructions," says M'Arthur, in his valuable work, "of which several of the sections are susceptible, and the want of explicitness in the wording of others, have too often left the minds of the best informed in a state of doubt and conjecture. Hence the necessity of the executive power, and members of courts-martial, resorting so frequently to the opinions of counsel."

practice of civil courts under similar circumstances.\*

#### COPY OF CHARGES.

“WHEN a court-martial is appointed to be held, the officer who is to *preside* thereat shall take care that a *copy* of the *charge* or complaint be delivered to the person accused, as soon as may be after he shall have received the order to hold such court-martial, and not less than twenty-four hours before the trial, except in cases of mutiny, or such other pressing circumstances as might render such delay inexpedient to the public service.”†

#### JUDGE-ADVOCATE'S WARRANT.

By Admiral *Fairbrother*, &c. &c. &c.

WHEREAS the Right Honourable the Lords Commissioners of the Admiralty have directed me, by an order dated the 11th instant, to assemble a court-martial, and try Lieutenant *Thomas Thomas*, B. of His Majesty's ship the *Active*, for [here follows the charge]; And whereas by an Act passed in the 22nd Geo. II. for amending, explaining, and reducing into one Act of Parliament the laws relating to the government of His Majesty's ships, vessels, and forces by sea: and also, an Act made in the 19th year of the reign of His Majesty Geo. III., intituled “An Act to explain and amend the foregoing Act;” It is ordered, “that in the absence of the Judge-Advocate, and his deputy, the *Court* shall have full power and authority to appoint any person to execute the office of Judge-Advocate:”

I do, with the *consent and approbation* of the members who constitute this court, hereby authorize and empower you to execute the

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\* “The duties of a naval judge-advocate are defined,” says M'Arthur, “in so general a manner, in the Act of Parliament and printed instructions, that, on different occasions, it has been deemed expedient to have the opinions of counsel.”

† “Naval Instructions.”

office of Judge-Advocate on the above occasion. For which this shall be your warrant.

Given on board His Majesty's ship *Britannia*  
(where the court is assembled), in Ports-  
mouth Harbour, this 8th day of Feb. 1835.

WM. FAIRBROTHER.

To Thomas Giles, Esq., hereby  
appointed to execute the office  
of Judge-Advocate.

It will be seen that the deputy-judge-advocate's appointment, according to the form of warrant, requires "the *consent* and *approbation* of the members who constitute the court. But the court is not constituted, nor has power to act, until it be legally convened, and the members assembled, and sworn in. This anomaly has long since been pointed out by the celebrated Judge Bathurst.

#### JUDGE ADVOCATE'S POSITION WITH THE PRISONER.

It is clearly laid down by M<sup>r</sup>Arthur, "that though a judge-advocate may be considered in the light of a prosecutor for the crown, yet it does not from thence follow that he is to deny reasonable assistance to the prisoner in his defence, either in point of law or of justice. On the contrary, it is his duty that the proof, both on the part of the crown and the prisoner, should be properly laid before the court. And where any doubtful point may arise, he should rather incline to the part of the prisoner; and nothing should induce him to omit any circumstance in the minutes of proceedings that may have a tendency to palliate the charges exhibited against the party accused; were he to omit the

insertion of any such circumstances, of his own accord, with a view to save himself trouble, his conduct would be highly culpable."

**JUDGE ADVOCATE'S OPINION** upon points of procedure.—In the deliberations and debates of a court-martial; the judge-advocate may offer his sentiments and opinion, if required; or, if he observe any error in point of law, or doubts to arise, he ought to offer his judgment for the information of the court; and he should communicate every matter which may conduce to a legal decision of the points in question.

#### ASSEMBLING THE COURT.

WHEN the officers who are to constitute the court are assembled on board the "appointed ship," the judge-advocate will, in the first instance, ascertain the seniority of the captains present. If any captain be absent upon "Admiralty leave," the circumstance is to be reported to the president, who, according to the "Naval Instructions," is to receive the cause assigned as an admission for the absent captain. But should any member be absent through ill health, the surgeon of the ship will be required to attest upon oath the indisposition of his captain, and his inability to become a sitting member of the court convened.

Should the surgeon, however, decline to make such deposition, or the testimonials produced of the captain's ill health be not satisfactory, or be deemed inadmissible, the members then assembled may immediately break up,\* as not being authorized to form a

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\* The reasons which prevent the formation of a court are to be stated in a letter to the Admiral on the station, or addressed to the Secretary of the Admiralty, signed by all the members assembled, or convened by notice or signal.

court; or to dispense with the non-attendance of a member not legally excused.

“ On the other hand, when a member's inability to attend is admitted, and the court is formed, the judge-advocate takes the fact down in the minutes, immediately after the names of the members present, in the form prescribed.”

#### FORM OF MINUTES.

MINUTES of proceedings at a Court-Martial, held on board His Majesty's ship *San Josef*, at Hamoaze, on the 12th day of February, 1835.

#### PRESENT:

Richard Curry, captain of His Majesty's ship *San Josef*, and senior captain of His Majesty's ships and vessels at Hamoaze.

#### CAPTAINS:

James Richard Dacres.	Jeremiah Coghlan.
John Clavel.	William Fisher.
John Simpson.	Frederick Hickey.
Thomas White, (A.)	Henry Fanshaw.*

AN INTERESTED PARTY is not to become a member of the court.

By the fifth Article in the printed instruction under the head of Courts-Martial, the following prohibitory passage appears:—“ If any officer entitled by his rank to sit at a court-martial be personally *interested* in the matter to be tried, he shall not be permitted to be of

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\* The name of the captain absent on Admiralty leave, as well as that of the captain unable to attend through ill-health, must be inserted in the minutes, immediately after the names of those present, thus, “ being all the captains of ships in Hamoaze and the anchorage at Plymouth Sound, except Captain John Norman Campbell, of His Majesty's ship ———, who is absent with leave from the Lords Commissioners of the Admiralty, and Captain ———, of the ———, who certified to the President his inability to attend, through ill-health.”



the number of members of whom the court shall be composed. If any doubt shall arise as to his being so personally interested, the question shall be decided by the majority of officers whose right\* to sit in court is unquestioned."

#### SWEARING-IN THE COURT.

THE members who are to constitute the court being seated to the right and left of the president, according to seniority, and the judge-advocate facing him at the bottom of the table, the president then directs the prisoner to be brought into court, attended by the provost marshal. The witnesses, *both in support of the charge*, and of the prisoner's defence, are also to be admitted into court, and every other person who may

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\* "Upon the principle," says M'Arthur, "that members of a court-martial are both judges of the law and of the fact, and that, as such, they are to be considered in the double capacity of judges and jurors, amenable to the laws of their country for any flagrant partiality or illegality in their proceedings, they ought to be extremely delicate and cautious of rejecting any challenges or objections made by a prisoner, previous to the court's being sworn, without first admitting him to shew cause; because, upon a consideration of the reasons assigned for such challenge, if they be not sufficiently valid, a *majority* in opinion may always overrule the challenge, and afterwards proceed on the trial.

"A prisoner, however, may object to any officer sitting upon his trial at a court-martial, if that officer had previously sat at a '*Court of Inquiry*,' and had given his opinion upon the matter at issue. This constitutes a legitimate cause of challenge, and which it will always be the duty of the judge-advocate to anticipate. But it is by no means a valid objection to an officer becoming a member of a court-martial, that such officer had sat at a previous court-martial, on the trial of either the prosecutor or prisoner, implicated in charges connected with each other, or of a recriminating nature."

think proper to attend to the proceedings of the trial. The court then being "open," the judge-advocate, standing, reads audibly the order for assembling the court, and likewise the order or warrant of his own appointment. He then proceeds to call over the names of the president and members already ranged in the order of seniority, and administers to them\* the oath prescribed by the statute for regulating naval courts-martial.

After the members of the court have been sworn in, the president proceeds to administer to the judge-advocate the following oath:—

*"I, A. B., do swear, that I will not, upon any account, at any time whatsoever, disclose or discover the vote or opinion of any particular member of this Court-Martial, unless thereunto required by Act of Parliament.*  
*"So help me God."*

The judge-advocate then reads the charge or complaint against the accused party, when the court may proceed to call the first witness in support of the prosecution, and the judge-advocate will administer to the witness the following oath, which is to be repeated aloud:—

*"I, A. B., do most solemnly swear, that in the evidence I shall give before the Court respecting the present trial, I will, whether it be favourable or unfavourable to the prisoner, declare the truth, the whole truth, and nothing but the truth.*

*"So help me God."*

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\* The custom of the service sanctions this oath being taken collectively, each member repeating aloud the required asseveration. This mode of swearing-in the members, is adopted with a view to save time; but to impress an auditory with the solemnity due to such an occasion, the president of a naval court-martial has, before now, required of the judge-advocate to administer to each member individually the prescribed oath.

## WITNESSES TO BE KEPT APART.

ALL witnesses intended to be produced, either on the part of the prosecution, or in favour of the prisoner, should be kept apart, and no witness should be allowed to enter the court until called upon to give his testimony.

## OPENING OF EVIDENCE.

AFTER the witness has been sworn, the prosecutor puts his opening question to the deposing party, or the president may desire him to relate to the court what he knows respecting the charge or charges alleged against the prisoner. When the prosecutor has terminated his examination of the witness, or the latter has related his statement to the court, the members then, with the approbation of the president, may put individually such interrogatories as may be deemed necessary towards the investigation of the *truth*, and afterwards the prisoner may be permitted to interrogate the same witness. This in civil jurisprudence is termed "cross-examination."

## LEADING QUESTIONS.

LEADING questions should never be shaped in a manner which may have a tendency to *instruct* the witness in the answer he is to give, and which is to be recorded in the minutes of the trial. It is therefore improper, and contrary to precedent, for the prosecutor to put a question preceded by the negative particle *not* ;\* such as, "Did you *not* hear?" or, "Did you *not*

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\* The prohibitory particle appears only to be confined to the "examination in *chief*." The prisoner, in *cross-examining* the

see, at such a time, or such a day?" &c., because the particle *not*, as Mr. Arthur shrewdly observes, "obviously suggests to the witness the answer which the interrogator wishes,—namely, in the *affirmative*."

#### DISPUTED POINTS.

If, in the course of examination, whether on the part of prosecutor, prisoner, or member of the court, the pertinency or propriety of a question be in any way doubted or disputed, the court should be *cleared*, and the adoption or rejection of the question decided by the majority of its members.

#### RE-EXAMINATION OF A WITNESS.

SHOULD the court, or judge-advocate, with the consent of the court, require a witness to be further examined, it is permitted to call in the same witness as often as it may seem essential to the attainment of truth. But it becomes questionable whether it be strictly legal to re-examine a witness after the prosecution or case of the prisoner has closed.\*

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witnesses produced in support of the charge, the prosecutor in cross-examining those in behalf of the accused, and the members of the court in examining either, "can with propriety frame their questions with the negative particle *not*, and even blend them with collateral circumstances connected with the fact under investigation, so as the answers extracted from the witness may go to the whole truth, with every extenuation or aggravation of the offence."

It is not intended to dispute the propriety of not employing the *negative* particle in *cross-examination*; but the judge-advocate should point out to the court whenever interrogations have a tendency to *prompt* an acute witness, or perplex an *agitated* party.

\* At a recent court-martial, held at Portsmouth, on Lieutenant St. —, of His Majesty's ship A —, the right of re-examining

## WITNESSES SUMMONED BY THE COURT.

THE "Naval Regulations" permit a witness to be called in by the court, although that witness be not desired by either the accuser or accused; the only object of the court being to elicit fully every fact connected with the case under trial.

## HEAR-SAY EVIDENCE.

WHAT a stranger has been *heard* to say\* is, in strictness, no manner of evidence, either *for* or *against* the prisoner. The justice of this rule is obvious, particularly when it is taken into consideration that such *information* is not upon oath, and that the party implicated is deprived the opportunity of cross-examination.

## WRITTEN EVIDENCE.

Log books, muster books, official instructions, and government gazettes, are deemed to be admissible evidence; and instances stand on record, that threatening letters or documents, containing indecent or violent expressions, forwarded with a view to insult a superior officer, or even to quarrel with an inferior,

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a witness after the prosecution had closed was disputed. The question was referred to the crown lawyers, who agreed in opinion as to the validity of the objection taken.

\* M<sup>r</sup> Arthur says, "that hear-say evidence may be made use of, by way of inducement or illustration of what is properly evidence."

The latter term employed by the above authority is by no means a clear "*illustration*" of his rule. The word "*inducement*" is more intelligible; still it will be always safest to reject *hear-say* evidence, unless it is made manifest to the court that such *information* will lead to the prompt production of *bonâ fide* evidence that can attest *facts*.

have been received by a court-martial as sufficient evidence to convict an offending party.\*

EVIDENCE TO BE CORRECTED BEFORE THE  
WITNESS LEAVES THE COURT.

As all *received* evidence is to be registered in writing, it becomes the duty of the judge-advocate to read aloud, in a clear and articulate tone, the testimony adduced by the witness, in order that the court, as well as the deposing party, may be satisfied such testimony be correctly recorded. Should there be any desire on the part of the witness to amend, explain, or make clear his evidence,† the judge-advocate should

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\* Several cases might be cited in support of the reception of such evidence. One will suffice; and is here adduced in preference to the numerous instances which stand on record relative to anonymous letters from the fore-mast men of the fleet. In the year —, Lieutenant M — x, of His Majesty's ship L —, was tried by a court-martial for having written a letter containing insolent and infamous expressions respecting Captain P —, his commander. The hand-writing of Lieutenant M. was proved to the satisfaction of the court; and this documentary evidence was the only evidence that could be produced in support of the prosecutor's charge. The wisdom of admitting such evidence as that above cited is manifest; for were not written documents of this nature, when proved to be the hand-writing of the accused, to be received as admissible evidence, there would be no possible means of punishing parties who, from malicious motives, may indulge in this unmanly and unconstitutional mode of assailing the character or maligning the reputation of a superior in office.

† In civil jurisprudence, counsel are apt, in cross-examining a witness, to impeach his credit on apparently contradictory matter. On such occasions, Lord Mansfield was wont to interpose, saying, "Would you have the witness perjured, because *he will* not be perjured, but corrects himself, like an honest man?"

intimate such desire to the court before the witness withdraws.

#### WITNESS, CREDIBLE AND COMPETENT.

“THE members composing a court-martial, who act in the double capacity of judges and jurors, should weigh well the *credibility of a witness*. Should the prosecutor, or party accused, take exceptions to the *competency\** of a witness, it will be for the court to decide their validity. But, the exceptions are to be publicly stated, and inserted in the minutes of the proceedings.”

#### PROSECUTOR'S TESTIMONY.

THAT a prosecutor should be entitled to give evidence in support of the charges brought against a prisoner, is perfectly admissible. On similar principles of justice, the person accused may call on the prosecutor to give evidence to facts in exculpation of the charge, as well as to the general conduct and tenor of his character; and the prosecutor may also be called upon to produce records or documents of any kind, which may be deemed necessary for the

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\* “No two terms have been more frequently confounded, and, consequently, less understood, than those of *competent* and *credible*, as far as relates to witnesses. A witness is properly said to be *competent*, whenever he can be examined before a court; his *competency* is a question of *law*, to be determined by the judge previous to his giving evidence in the cause. If the *law* permit him to be examined, his *credibility* forms the most important part for the consideration of a jury; and they must decide on this, according to the opposing or corroborating circumstances of the case.”—*M<sup>r</sup> Arthur*.

prisoner's defence. When the privacy\* of the offence is of such a nature as to exclude the possibility of having more than one evidence, it is customary to admit such testimony, as being *competent in law to convict* the party accused.

#### SITTING MEMBER—A WITNESS.

It is essential in this place to define the difference which exists between the evidence of "an interested party," † and that testimony which may be adduced, and received, by a member composing the court.

It frequently happens on foreign stations that no more officers can be collected than is sufficient to constitute a court. Circumstances may therefore arise in the course of a trial to render the testimony of a sitting member, whether in favour of the prosecution or the party accused, most essential evidence. And

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\* "Lieutenant Thackeray, of His Majesty's sloop 'Thorn,' was tried at a court-martial, held in January, 1789, on several charges exhibited against him by Capt. William Taylor; and, amongst others, for going into the captain's cabin, when alone at sea, and calling him *scoundrel and liar*. The privacy of this offence excluded all other positive evidence but that of the prosecutor; and when the court assembled, Captain Thompson, the president, had his doubts of the propriety of the court's admitting Captain Taylor to give his evidence. The court was, therefore, adjourned, until they had counsel's opinion on the point. The substance of which was, that, in criminal cases, it is not a legal objection to the competency of a witness, or to the admissibility of his evidence, that he is the prosecutor, whatever objections to his credit may arise under the circumstances of the case.

"The court afterwards re-assembled; the prosecutor's evidence was admitted, and Lieutenant Thackeray was deprived of his commission."—*M'Arthur*.

† Vide "Naval Instructions."



as the investigation of *truth* is the only object in view, "it does not," says M<sup>c</sup>Arthur, "seem incompatible with the principles of law or of equity, that such a member (who sits in the united capacity of judge and juror) should be sworn in open court, and, after having given his testimony on the matter at issue, resume his seat, like a juror. But it may not be improper to observe, that a court, in judging of the innocence or guilt of a prisoner, is by no means to be *influenced* by any report or *opinion* of any member or other person, not given *publicly* in *evidence*, whatever may be the respectability and the accuracy of him from whom the information is received."

## LAW OF EVIDENCE.

POSITIVE PROOF is always required where, from the nature of the case, it appears it might possibly be had.\* But next to *positive* proof, *circumstantial* evidence, or the doctrine of *presumptions*, may take place; for when the fact itself cannot be demonstratively evinced, that which comes nearest to the proof of the fact is the proof of such circumstances which either necessarily or usually attend such facts; and these are called presumptions, which are only to be relied upon till the contrary be actually proved. *Violent* presumption is often equal to full proof,† where those circumstances appear which necessarily attend and are incident to the fact.‡

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\* Blackstone's Commentaries, vol. iii. p. 371.

† Coke upon Littleton, p. 6.

‡ If a man be found suddenly dead in a room, from a wound by a sharp instrument, and another be found running out in haste,

CIRCUMSTANTIAL OR PRESUMPTIVE EVIDENCE.—In such cases, it is necessary that all witnesses be persons of *unimpeachable* veracity, as it is possible the prisoner may be innocent of the crime. In evidence of this kind there is great room for doubt as to the guilt of the prisoner ; and it is a principle in law, that, in every case of *doubt*, a court should lean to the merciful side, and acquit.

#### OPINION AND BELIEF.\*

“ QUESTIONS of *opinion*” are sometimes put to witnesses which lead to considerable discussion as to the power of the court to compel the interrogated party to depose his *opinion*. M<sup>r</sup>Arthur says, “ when a question is put generally by a prosecutor, or any member of the court, as to the witness’s *opinion* of the accused performing, at the time specified in the charge, the duty imposed upon him negligently, or not doing his *utmost in battle*, such witnesses may, from delicacy, *decline* giving any opinion in his evidence ; he need only answer to every question of *fact*, because the *opinion* of a witness on the culpability of a prisoner

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with a bloody sword, this is a *violent* presumption that he is the murderer ; for the blood, the weapon, and the hasty flight, are all necessary concomitants to such a horrid act ; and the next proof to the sight of the fact itself, is the proof of those circumstances that do thus strongly indicate the fact. But this *alone* would not be sufficient to convict a man of murder.

\* A witness, when under examination in chief, must not depose as he “ *thinks*” or “ *believes* ;” he must swear from the knowledge of the *fact*. But his *belief* is evidence on the *cross-examination*, whether examined on the part of the crown, or of the prisoner. This, in civil jurisprudence, is a received rule. But at naval courts-martial a matter of *belief* is seldom admitted as evidence.

ought not to be admitted as evidence to influence the judgment of a court-martial. There are, however, cases\* in which members of a court-martial, or the prisoner, in cross-examination, may desire the *opinion* of a witness.

#### DEFENCE OF PRISONER—HOW CONDUCTED.

THE court "having gone through the examination of all the witnesses in support of the charge, and allowed the prisoner to cross-question them severally, he is then put on his defence; which, if already prepared, he is allowed to read to the court, or he may dictate it to the judge-advocate, in order to its insertion in the minutes. But should the trial be of importance, and a variety of circumstances have been brought forward, upon which the prisoner was unprepared, he may, upon soliciting the court, be indulged with an adjournment until a subsequent day, for the purpose of the better preparing himself for his defence, and the examination of his witnesses in support of what he may have occasion to affirm."

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\* "For instance, if an officer be tried on a general charge of disobedience of orders, or of contempt of his superior,—of being drunk on duty, or behaving in a scandalous or infamous manner, as is unbecoming the character of an officer and a gentleman, &c. Any question of opinion put to a witness by the court or prisoner, relative to the particular conduct of the accused in these cases, may be highly proper and necessary; and the court usually determine on the propriety of their being asked and answered." A witness may be also required to state his *opinion* touching the operations and evolutions of a fleet, or of the order and discipline of a particular ship.

## WITNESSES IN SUPPORT OF DEFENCE.

AFTER the prisoner has made his defence, "the witnesses in support thereof are to be separately called into court, sworn and examined, the prisoner first asking them such questions as he may deem material, whether to invalidate the prosecutor's evidence, or to establish his general character and good behaviour. He is to be allowed to produce written documents, either in his exculpation, or as to character and good behaviour.

"The examination of the prisoner's witnesses\* is conducted in a similar manner to that of the evidence for the prosecution. When the prisoner's interrogatories are ended, the members of the court, or judge-advocate, may put such questions as appear to them proper for bringing out the truth. The prosecutor is generally allowed to cross-examine the witnesses upon the points brought forward by the prisoner, but he is by no means to introduce new or *extraneous* matter; and, after that, the prisoner may again put any additional interrogatories to his witnesses. The evidence being then closed, and having nothing further to offer in his defence, the court is cleared, that the members may proceed to deliberate upon the judgment to be pronounced."

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\* "The counsel or *advising* friends of the prisoner may be permitted to assist him in shaping questions as they arise. Such questions are to be written on separate slips of paper, and only to be delivered to the judge-advocate by the hands of the accused. If the question be approved, the judge-advocate reads it aloud to the witness, and inserts it, with the answer, *verbatim*, in the minutes of the trial."

## DELIBERATION OF EVIDENCE.

“ THE evidence on both sides being closed, it remains for the members to deliberate upon the evidence produced for and against the prisoner, and to take into mature consideration the palliating circumstances, either offered in his defence, or which may have arisen in the course of the investigation. When they are fully prepared, the judge-advocate states the question respecting the prisoner’s guilt, and which at naval courts-martial is put to each member separately, beginning with the junior, and ending with the president, and is usually couched in the following words:—“ Are you of opinion that the charge against the prisoner is *proved* or *not proved*?” Or thus, “ Is he guilty or not guilty of the crime laid to his charge?” Should the majority of members be of opinion that the charge is proved, those members are to assign the punishment to be inflicted upon the prisoner; and it is to be observed, that, in order to give force and validity to the judgment of the majority, the sentence of a naval court-martial is to be signed by every member of the court, by way of attestation, notwithstanding any difference of opinion there may have been among them.”

## SURGEON.

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### PRELIMINARY REMARKS.

IF the services of a medical man are a great blessing on shore (and few will dispute the fact), how inestimable must they be deemed afloat, when the vessel is far removed from land and its numerous resources?

Few considerations indeed more forcibly, and at the same time more favourably seize upon the minds of men-of-war's men,\* than the knowledge that the ship possesses a surgeon, whose professional skill is equalled by his unremitting attention and consolatory kindness to the sick.

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\* Men-of-war's men always appreciate medical attention.

## GENERAL DIRECTIONS.

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### EARLY DETECTION OF DISEASE.

EARLY detection and early treatment of disease being the first essentials towards its speedy and effectual cure, the surgeon should particularly impress upon the minds of the petty officers, seamen, and marines, the necessity of *timely*\* intimation in all cases of complaint.

### FEBRILE SYMPTOMS.

WHENEVER, in the treatment of febrile disease, symptoms are discovered which give rise to the slightest suspicion of the complaint having been

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\* The surgeon should interrogate such of the ship's company whose personal appearance indicate malady or predisposition to sickness. Such solicitude on the part of the surgeon is always taken as intended, and is sure to beget "good will," and command respect for the medical office.

produced by infection, the surgeon should immediately communicate the circumstance to his commander, in order that proper precautions\* may be promptly taken to prevent the risk of dissemination.

#### VISITING THE SICK.

THE surgeon is required to visit the sick twice in the day. His own anxiety and solicitude for sufferers will suggest to him the propriety of repeated visits; and he should exact from his assistants the closest attention to all patients in a precarious state, reporting to him aught of alteration in the symptoms of each particular case.†

SICK LIST.—This officer, after visiting the sick, is required to deliver daily to the captain a list of

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\* “When men are taken ill of fever of an infectious nature, they should immediately be stripped on entering the sick berth, and, if practicable, washed with soap and warm water; their linen should be changed, and the patients placed in a bedding allowed for the use of the sick. Care should be taken that the clothing and bedding of the sufferer be immediately immersed in boiling water.”—*Instructions*.

† In all cases (for there are a variety incidental to the seaman's situation and mode of life) which depress the spirits of the patient, it should be the study as well as the duty of the surgeon to soothe and cheer the afflicted by the most humane attention, and by every expression of consolatory kindness; to hear, with patience, all complaints, and redress all real grievances. Such conduct will at once inspire the sick with confidence, exhilarate their spirits, and materially tend to hasten the restoration of health.



all those who are incapable of performing their respective duties. At the same time he should offer to the captain such suggestions as may tend to ameliorate the condition of his patients.

#### SICK RETURNS.

THESE "Returns" should accompany the "Weekly Account;" and upon all occasions when it is necessary to present the latter document to a senior officer, the surgeon should be prepared with the "sick report."\*

#### INSPECTING THE SICK UNDER THE HALF DECK.

THE practice of parading the sick under the half-deck in the presence of the captain, is one that might be "more honoured in the breach than in the observance." Doubtless the custom was originally adopted with the best possible intentions, but good intentions are not always followed by good effects. Sick men seek repose, and no sympathy, however plausible in appearance, can com-

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\* In meeting a senior officer at sea, it frequently happens that the captain is delayed in proceeding to pay his respects to his superior, in consequence of the surgeon not having filled up the official formula required upon these occasions. In naval, as well as medical matters, "delays are *dangerous*."

pensate for the annoyance and worry of being disturbed.

### DISCRIMINATION IN DETECTING SKULKERS.

THE idea that seamen of the service are often disposed to seek surgical relief under "false pretences," is not justifiable. That the "*jail birds*" of former days used to impose upon medical credulity, few will attempt to deny. But the surgeon should rather appear to believe the complainant's statement, than permit any hasty ejaculation to escape him, even though he may have strong reasons to suspect the motives of the appealing party.\* The surgeon, in fact, should economize his suspicions, and keep them to himself. A medical man *may* be mistaken, and a solitary instance of erroneous decision is not only calculated to bring

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\* If the surgeon is not devoid of professional tact, he will adopt medical means to punish the party in a manner that will at once expose the deception, and cure the culprit. The penal part of the prescription should be kept out of sight; no martial *intercession* should be called in aid of medical treatment. Threats of turning the patient over to the captain, or the first-lieutenant, should never be resorted to—it savours of "bad practice," and bespeaks little for the science of *physic*. The "*Materia Medica*" and the "*Articles of War*" are not to be pounded in the same mortar.

into disrepute the professional skill and sagacity of the surgeon, but to engender a feeling of dissatisfaction afloat, and, what is equally bad, to induce a general *disinclination* to seek medical aid, when medical aid is in *reality* required.

#### JOURNAL, AND CASE BOOK.

A JOURNAL is required to be kept by the surgeon, in which should be daily inserted the name, age, station, and disease of every individual under medical treatment, noting the description of diet, and remedies prescribed for the patient.

“*A Case Book*” becomes also a necessary record,\* which should be regarded as a register of the symptoms, treatment, and result of all extraordinary and interesting cases of disease, with such remarks as subsequent investigation or reflection may furnish.

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\* The surgeon will do well to impress upon the mind of his assistants, the advantages to be derived from each keeping a record of this description—to wit, “the *Blanc Medal*.”

## FIRST COMMISSIONING.

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### INSPECTION OF INSTRUMENTS.

UPON joining his ship, after reporting himself to the captain or commanding officer, the first duty of the surgeon is to submit his surgical instruments to the inspection of the physician of the fleet, or to other appointed authorities.\* He will also be held responsible that the instruments which his assistants are required to provide are complete and in perfect repair.

### FITTING UP SICK BERTH.

THE surgeon should overlook the artificers of the dock-yard when employed in framing and fitting-

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\* If there be no physician of the fleet employed, the inspection of instruments will take place at the Naval Hospital, by the surgeons of that establishment.

up the sick berth. Various are the *costless* accommodations which, for the comfort and convenience of the sick, may be pointed out to the "*Foreman afloat*," which may be furnished and fitted by that authority without at all infringing the much-dreaded law of "*Establishment*."\*

#### EXAMINATION OF NEWLY-RAISED MEN.

THE persons of newly-raised men should be carefully examined by the surgeon. This duty is too frequently delegated to the "assistant." In cases of "survey," the surgeon may be "called to *account*" touching the reception of unserviceable subjects.

#### ACCIDENTS.

It invariably occurs that, during the first month of the commissioning of a vessel-of-war, more ac-

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\* The tender sympathies of the shipwright are seldom manifested in favour of the seaman, sick or sad; nevertheless, there are worse *landmen* doomed to "walk the waters" than the "*foreman afloat*."

The surgeon should also bear in mind that shipwrights and builders "*bore*," when it be desired to "get at" the soft *spot*. This, in technical parlance, is termed "tasting." May not the medical officer proceed upon the same principle,—"*taste*" the temper of the mortal "*stuff*," and "*bore*" gently, till he "*gets* at the *soft spot*" of the accommodating mechanist.

cidents happen than at any other period of a ship's service. Possessed of this fact, the surgeon, during "*working hours*," (though contrary to the too prevalent practice of this officer,) should not leave the ship.\*

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\* It should be borne in recollection, that in the two principal ports where naval hospitals are established, the *tide* will not always admit of conveying men who may have received serious hurts in the hold, or compound fractures from falls from aloft.

## IN PORT.

## RE-SUPPLY OF MEDICINES.

WHEN a renewed supply of medicines and necessaries is required for the use of the sick, the surgeon is officially instructed\* to "take to the hospital the chest which is sought to be completed," together with its "remains."† "All demands for medicines and necessaries, (excepting in cases of real emergency, the nature of which is to be expressed on the "demand") are to be made in time, to pre-

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\* Vide "Instructions."

† As His Majesty's ships are now fitted with *fixed* dispensaries, it is presumed that the dispenser of the hospital will *dispense* with the necessity of landing the "remains." This has always been held as a very inconsiderate "*check*" to medical relief. If a casualty occur afloat, and the "*chest*" be on *shore*, how, be it asked, is the sufferer to benefit by the *missing* "remains"?

vent inconvenience to the hospital, by their being delayed till the ship is about to sail; and they are to be delivered at the hospital before three o'clock in the afternoon; and no articles are to be returned into store after that hour."

#### INQUIRY AFTER PATIENTS ON SHORE.

DURING the detention of the vessels in port, the surgeon should avail himself of every opportunity to visit the sick of the ship, who may have been sent to the hospital, or sick quarters, for cure; and he should endeavour to ascertain, for the information of the captain, whether the patients are so convalescent as to rejoin\* the ship before she sails.

#### OPERATIONS AT THE HOSPITAL.

THIS officer, when his services can be spared from the ship, should avail himself of every opportunity to attend at the naval hospital when a surgical operation is to be performed. The precise period is always intimated by signal.

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\* Independently of the necessity of ascertaining a point so essential to a ship, possibly "short-handed" already, the sick on shore will always attribute such inquiry to professional solicitude, and personal kindness on the part of the surgeon.



## CONSULTATIONS.

THE surgeons of the service seldom convene for the purpose of consultation. It frequently happens that vessels-of-war are collected at the same anchorage, in the vicinity of which there is no naval hospital, nor establishment for the recovery of sick and of wounded seamen. Under these circumstances, and more particularly when severe sickness or dangerous disease prevails afloat, it is the duty of the doctor to call in medical aid. A telegraphic communication can readily announce this desire, and can always convene the surgeons of the squadron to meet in consultation\* on board of the ship required.

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\* Possibly the disinclination manifested by the faculty to consult afloat may proceed from mistaken notions of *delicacy*, added to the desire of sparing brother officers a "*long pull*," and particularly the pain of *not* "pulling together."

## A T S E A.

## DIET OF THE SICK.

IN regulating the diet\* of the sick, the surgeon should impress upon the mind of the patient, that the substitution of *wine* for spirits is not (as seamen too generally imagine) to be considered in the light of a *penal draught*,—but that, on the contrary, the lighter liquor is prescribed with a view to hasten, instead of to retard, the restoration of health. Should the ship be supplied with “preserved meats,” the surgeon should “demand” from the purser a sufficient allowance for the support of patients in a delicate state.

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\* Upon all occasions that fish be taken in the haul, the surgeon should be careful that the sick be *first* supplied.

## WARMING AND VENTILATING THE SHIP.

It is the duty of the surgeon to acquaint the captain whenever he may deem it necessary to light stoves, and otherwise ventilate the lower deck.—*Vide Carpenter*—“*Pump-well.*”

## TIMELY CHANGE OF SHIP'S COMPANY'S CLOTHING.

“CHANGE of climate, change of clothing,” should be received as a medical maxim. Crews of ships returning from foreign stations frequently suffer from catarrhal, pulmonic, and rheumatic complaints, arising solely from a deficiency in warm clothing. When the ship is destined to return from a warm to a cold climate, measures should be taken to provide an adequate stock of suitable slops.

## CLEARING FOR ACTION.

AMPUTATING operations are only to be accelerated by a ready arrangement of the required instruments and surgical “appliances.”\* Care should be

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\* A distinguished medical officer has recently invented a *portable* amputating table, which is made to contain all the instruments and apparatus requisite for *ready* operations. It is very light, and can be carried from the cockpit to the sick bay by two men.

taken that the locality of the cockpit be perfectly clear, that a proper proportion of lights be securely placed, that a sufficient supply of fresh water be ready at hand, and that tourniquets be distributed on the different decks,\* and conveyed aloft to the people stationed in the tops. Should there be a paucity of tourniquets in the ship, the surgeon should cause a temporary number to be made.

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\* On the occasion of a "general exercise," the surgeon and his assistants are recommended to go round the different decks, for the purpose of shewing seamen and marines the utility of the tourniquet, and manner of applying it.

## MASTER.

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### PRELIMINARY REMARKS.

THE qualifications required in this officer are by no means few, and, indeed, are seldom possessed by one individual. It will not be denied that it is less difficult to find a representative of any other station in a vessel-of-war, than to obtain what is professionally termed a "good master." In him should be concentrated the knowledge divided amongst the other officers, both warrant and commissioned. He should be a thorough seaman—a practical rigger—accustomed to stow and distribute the ballast of a vessel to the best advantage—a proficient in every branch of common navigation—be competent to take, with precision, "angular distances, terrestrial and celestial," to "procure rates"

for chronometers, to undertake their care and management, and, finally, to be sufficiently acquainted with the theory and practice of marine surveying to enable him to complete a correct survey of a strange port, or an unknown coast; and to these attainments he should add a character of nerve and decision.\*

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\* "More depends," said a celebrated admiral, when eulogizing the merits of a well-known master—"more depends on the conduct and ability of this officer, than on any other in the ship. If the first-lieutenant be called the captain's right hand, the master may be said to be his right arm,—ay, and right leg; for he can scarcely move without him."

How few officers are now to be found deserving the admiral's eulogy!

## GENERAL DIRECTIONS.

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### HOLDS, PROVISIONS, AND WATER.

THE provisions and water being entrusted to the custody of the master, he will be required to account for the daily expenditure of the water, and to use every possible precaution in the preservation\* of the provisions and victualling stores.

### INSPECTIONS.

OF CABLE TIERS.—The master should constantly inspect the cable-tiers, and see that they be kept perfectly clear and well ventilated.

OF STANDING & RUNNING RIGGING.—The

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\* Care must be taken that the *dry* provisions be not stowed *under* the wet, and that the *old* supplies be placed uppermost, and issued *first*.

master is required to inspect constantly the state of the standing and running rigging, and to report to the captain or commanding officer upon all occasions that the former may "need setting up," or that the latter may appear unserviceable and require renewal.

OF STORES AND STORE-ROOMS.—He should see that the store-rooms contain nothing but the stores of the ship, and that each article is placed in its assigned position.

The Master will also be required to inspect the expenditure, and to examine the rough books of the warrant officers, at least twice in the week.

OF SPARE SAILS.—Vide *Mate-of-the-lower-deck*, under the head of "Spare Sails;" also, *Boatswain*—"Inspection of Spare Sails."

HALF YEARLY INSPECTIONS OF CHAIN CABLES.—Vide *Boatswain*.

#### SHIP APPROACHING THE SHORE.

WHENEVER the ship is in the vicinity of the land, and particularly standing with her *head* to the shore, the master is cautioned to keep the *hand-lead* "going in the chains."



Should there happen to be a pilot on board, and should overweening confidence or idle vanity induce a desire on his part to withdraw the leadsmen from the channels, the master is particularly cautioned to oppose\* the pilot's desire.

#### ANCHORING WITH CHAIN-CABLES.

THE anchor is frequently fouled in the very operation of "letting *it go*," the weight of the chain-cable causing the running-out part to fall over and foul the stock. To avoid a mishap, replete with such mischievous tendency, some officers pursue the practice of "letting go" the anchor with the cable *bitted*.†

#### STAYING MASTS.

THE practice of "staying masts with the wedges in" has been already deprecated, as contrary to every received system of "*seamanship*." The stays may be set taut "with the wedges in," but the

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\* In these cases courtesy must succumb to caution, though indeed the refusal may be couched in terms to avoid offence. "Pilot, my instructions will not permit me to comply with your request." Such intimation will prevent reply, and unnecessary argument. Parleys are not to be courted in "pilotage waters."

† Objection may be made to this practice, from an apprehension that the links of the chain-cable would "nip," and not "render," or run round the bits: experiment proves the reverse.

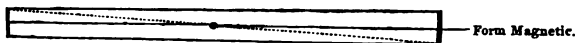
masts should be always "free" in the partners whenever there is occasion to alter the *position* of their "*standing*."

#### COMPASSES.—MAGNETISM.\*

"THE master is recommended to make careful observations on shore with all the compasses supplied to the ship, in order to ascertain correctly the *error* of each.

"This error is occasioned by the magnetic axis of the needle not coinciding exactly with the axis of form.

"In every needle the axis of form is represented by a straight line drawn through the centre of the needle thus—



whilst the *magnetic* axis of the needle is seldom, if ever, precisely in the same line, but may be represented by the dotted line passing along the needle, and the error of which is the angle formed at the intersection of those lines in the centre of the needle.

"Now, as the needle is attached to the card

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\* The annexed remarks are from the pen of the scientific Captain James Clark Ross, nephew of Sir John.

according to its axis of form, that is to say, the axis of form is placed so as to coincide exactly with the north and south points of the card, it consequently must take its direction from the magnetic axis, and therefore the cause of the error becomes obvious.

“It is also recommended that the use of two compasses in the binnacle be *abolished*, as the action of each on the other is frequently a cause of considerable error, varying in amount according to their relative magnetic positions. With the ship’s head at north or south, there can be no error, since the south poles of the needles have the same power of repelling each other as those of the north; and, therefore, no deflexion can be produced; but when the vessel turns toward the east or west, the south-end of one compass approaches the north end of the other, and the effect produced, by mutually attracting each other, is to make the vessel appear to be steering more to the east or west than is really the case. The amount of this error will increase as the vessel continues to turn more to the east or west, and will be equal in both compasses, so that whilst they appear to be correct, from exactly agreeing in their indications, they may

both be wrong to so large an amount, as to lead to very injurious or, perhaps, fatal consequences.

LOCAL ATTRACTION.—“ But the most important point to which it may be necessary to call the attention of all officers, is the very great amount of error occasioned by the attractive power of *iron*\* contained in the vessel; more especially in high magnetic latitudes. The exact amount of deviation produced by this cause should be carefully determined. To neglect of this necessary precaution, the loss of many valuable vessels may be traced.

“ It is therefore recommended, that the azimuth compass be kept constantly fixed in a spot as remote from any immediate attraction, as far from the binnacle compass, and as conveniently placed for frequent comparison with it, and for observations, as possible. By means of this

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\* Much time and trouble may be saved, and greater accuracy secured, by the application of the very ingenious contrivance of Professor Barlow, of Woolwich, for counteracting the effect of local attraction, by affixing an iron plate of considerable surface in such a position from the compass as experiment may prove to be proper. This valuable invention is not yet duly appreciated, although it may be safely asserted that every captain who chooses to apply for it may be supplied from any of the dock-yards; and the directions which accompany it are so simple, and easy to be followed, that no difficulty can occur in its application.

*standard*\* compass, the variation is to be observed with the ship's head directed to each different point, and, the true variation having been previously ascertained on shore, the deviation produced by the iron in the ship on that compass may be readily eliminated, and the point of no deviation determined, as in the following example :—

*Variation observed ashore, 27° W.*

Ship's head	N.E., variation	Obs <sup>d</sup>	Deg.	Min.	Deviation	Deg.	Min.
			24	20		2	40
E.	"		19	10	"	7	50
S.E.	"		23	0	"	4	0
S.	"		27	0	point of no deviation		
S. W.	"		30	10	"	3	10

“ The point of *no deviation* will continue the same under all circumstances, (if no considerable change be made in the distribution of the iron in the ship,) but the amount of deviation will diminish as the vessel approaches the magnetic equator, and increase as she recedes from it. It will therefore be necessary to repeat these observations as often as any very considerable change occurs in her mag-

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\* In long voyages it is absolutely necessary that the variation be frequently ascertained by the standard compass, and that the ship's course be always recorded by it, using the compass in the binnacle only as a guide to the helmsman, after it has been carefully compared, by the officer-of-the-watch, with the standard.

netic latitude. The process then becomes very simple; for the point of *no deviation* being known, it will be necessary only to place the ship's head upon that point, and observe the bearing of any very distant object, and the difference of the bearing of that object, with the ship's head in any other point, will be the amount of deviation due to that point. Thus, ship's head south, (being the point of *no deviation* before observed,)—a lighthouse bore, S. 52 deg. 15 min. E.—ship's head S.W. at bore, S. 45 deg. 45 min. E.; deviation, 6 deg. 38 min.; shewing an excess of westerly variation to that amount, and an increase of deviation of 3 deg. 20 min. since the preceding signs were made.

“By making observations on the points of greatest deviation, the intermediate points may be estimated by approximation when observations upon all the points cannot be conveniently made.

#### CHRONOMETERS.\*

“CHRONOMETERS are usually sent abroad with a ‘rate’ that has been procured for them at the

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\* The subjoined observations have been transmitted to the author by that scientific and distinguished officer, Sir John Franklin.

maker's, or at some establishment on shore ; but as a change of position and of temperature generally affects their respective rates, care should be taken, as soon as possible after their shipment, to ascertain, by *observation*, whether any, and *what* change has been produced by their removal from the shore.\*

LOCAL POSITION.—“ Chronometers should be placed in positions of the vessel in which they may be as little as possible exposed to concussion. The practice of placing chronometers in cots suspended from a beam is now very generally disused. In such situations they are exposed to vibratory shocks, consequent on the general operations of the ship's duties, as well as the motion of the vessel, which, in a heavy sea, is frequently greater than can be counteracted by the gimbles ; neither is the position of the rudder-head recommended. In that extremity

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\* At Portsmouth or Spithead, and in the River Thames, within view of the Greenwich *Observatory*, this can be done by attention to the “ dipping of the ball ;” but even in sight of the Observatory, the master is recommended to ascertain the fact by his own observations, if it were only for the sake of practice, and to procure sights for the longitude on leaving the anchorage, while some well-fixed point is in view, that he may be certain he commences his voyage with a knowledge of the state of his chronometers. Officers trusting entirely to the correctness of the rates of time-keepers taken from the shore, have often had their confidence shaken, after they had been at sea a few days, by finding the rates changed.

of the ship the motion is severely felt ; and in warm climates, especially, it frequently happens that, from the warping of the wood, the rudder-head becomes extremely loose and jarry ; besides, when kept in the after-cabin, chronometers are liable to be shaken by servants, when in the act of cleaning their cases.\*

**WINDING-UP THE CHRONOMETERS.**—“ In this operation the greatest care should be taken to avoid its completion with a jerk. A sudden jerk will inevitably cause an alteration in the rate of the watch ; an evil which can only be avoided by “ the winder ” counting, as he proceeds, the number of turns, and effecting the last revolution with a more steady and gentle hand. The number of turns required to wind up each chronometer should be distinctly labelled and affixed to the box, in a position to strike

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\* Chronometers should be kept in a box lined with baize, padded with wool, and either loaded with lead, or screwed down on raised cleats. The box should be divided into as many partitions as there are chronometers, and each partition well padded. This box should be placed in some part of the ship seldom frequented, yet easy of access ; the lower down, and the nearer secured to the middle planks of the ship the better—the centre planks being formed of oak, and consequently less “ springy ” than those of fir. In frigates, the master’s cabin is considered to be the best and most secure position in which these time-keepers can be placed.



the eye of such officers who may be deputed\* to wind them up in the absence of the master.

“ If there be more than one chronometer on board, the best should be considered as the standard, and with the best watch the others should be daily compared, registering such comparisons.

**TAKING SIGHTS.**—“ The master should be provided with a sextant, and a good watch, possessing a ‘second hand.’ Before and after taking sights, the watch should be compared with the chronometers. Every master should supply himself with an artificial horizon. It is customary with this officer to be satisfied with having obtained the longitude by chronometer once a-day. But observations, if practicable, should be made both morning and evening, and each to be taken as far from noon as can well be procured with accuracy. Except during the winter season, or when the meridian

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\* “ The persons deputed to undertake this duty, when the master may be employed on other service, should also be required to be present upon all occasions when the chronometers are to be wound up. Another cause of the change in the rate of a pocket-watch proceeds from the thoughtless and inconsiderate habit often pursued by the inexperienced winder, of turning the watch as well as the key, pending the operation of winding up the piece. The key only should be turned, whilst the watch be held firm and steady in the hand.”

altitude is not high, the altitudes '*for time*' should not be lower than  $15^{\circ}$ , nor, on any occasion, need they exceed 25 or 30 degrees. The mean of three or five 'sights' should be used, and, in every case, when the morning sights are not more distant than four hours from noon, the observer is recommended to note the sun's 'bearing' at the time, in order that he may insure one data for a double altitude. He can procure the other, if requisite, which should be as near *noon* as possible."\*

PROCURING RATES.—“Where there is not a 'transit instrument,' the best method of procuring rates is by equal altitudes of the sun, taken on shore with a sextant and artificial horizon. Though not to be compared with the above method, rates may be procured by means of single altitudes of

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\* The adoption of this practice cannot be too strongly recommended, especially when cruising in the vicinity of the British Channel, or in localities where the knowledge of the latitude becomes a desideratum. The methods of Mendoza Rios and of Dr. Inman produce accurate results: their calculations depend, not as others do, upon the latitude by dead-reckoning. If the morning observations be taken at a period too distant from noon, let others be taken at a proper interval from that time. It will generally be found, by using the precaution of procuring a "sight" and time together with the sun's bearing, shortly after noon, that by such means, together with "the evening sights," the latitude may be more accurately obtained than by any possible computation depending upon "the log."

the sun, observed in a similar manner either in the forenoon or afternoon, and to be taken at the same time on each day as nearly as possible. The rate may be deduced from a series of either of these observations, bearing in mind that, in the deduction, the morning and evening sights are not to be confounded. The rates found by each set separately may be added together, and the mean used, unless the results materially differ and there is reason to believe that the one series was taken under more favourable circumstances than the other; under such circumstances, of course, the result of the former must be considered as the rate.

The rate may also be obtained, the less accurately, by a series of daily observations with the natural horizon, provided the corrections be duly made for the state of both barometer and thermometer; which, indeed, should be made for every observation. Their errors for Greenwich time should be reduced from the latest sights that are considered to be good.

#### REMARK BOOK.

Vide—“*Printed Instructions.*”

## FIRST COMMISSIONING.

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### STOWAGE OF BALLAST AND TANKS.

THE errors which have perpetually arisen in the process of stowing vessels are attributable, on the one hand, to too implicit a reliance on certain fanciful hypotheses, and, on the other, to a rash disregard of principles, and a confidence in mere experiment and precedents; which latter, if more accurately investigated, would often be found inapplicable to the particular case for which they were adopted as guides. Mere theory, then, will not always suffice, neither will experiment, unaided by fixed rules. To establish these so as to be available when modified, and put in force by intelligence and general observation, is the great desideratum. A person who should undertake to

furnish such rules, should be one deeply versed in the higher order of mathematics, and gifted with the faculty, too rare among professors of the abstruse sciences, of clearly imparting their knowledge, acquired by these researches. Possessed of these, a seaman, if he be also a man of ordinary intellectual sagacity, will be able "to pluck out the heart of the mystery," which, to our great reproach\*

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\* It is singular, in a maritime nation like this, how little understood is the science of stowage, though indeed it amounts to a libel on science to designate as such a process which, up to this hour, is rashly made to depend less upon fixed principles than speculative opinions; for, surely, if stowage be considered in the light of a science, and if the naval architect can construct and complete a vessel purporting to possess certain properties, the builder should be competent to lay down positive data for the guidance of her stowage. The constructor, it is true, "calculates" upon the trim of the vessel; but what rules does he lay down for her stowage? If competent directions were established, what necessity would there be for that article, in "the Naval Instructions," requiring the master of the ship "to consult with the master shipwright of the dock-yard, on what may be the best manner of stowing the ship"? This official mandate is a manifest admission, that no specific rules are laid down by the constructor of the vessel to govern her stowage. The words "*best manner*" speak volumes. It will also be seen, that the same official injunction directs the master of the ship to consult a party who, probably, has no more knowledge, touching the vessel's construction, than that possessed by the *consulting* officer. For example—a ship is built at Milford, and, after being launched and jury-rigged, she is ordered to Plymouth to be put into commission. The master shipwright of that port, together with the master of the ship, both strangers to the newly-launched vessel, are the party deputed to project the plan of her stowage, whilst the projector may affect displeasure, though, in

(not to say loss) as a maritime nation, has so long brooded over one of the most important branches connected with nautical science.

But to achieve something like a successful stowage, it is highly essential that the stower be thoroughly acquainted with the vessel's construction, capacity, trim, recorded "qualities," and, above all, the *builder's* "centre of gravity of displace-

reality, delighted that authorities entrust to strangers "*the best manner of stowing the ship.*" And why? Because, in the event of failure, the architect can always attribute to the "bungling of the ballast" that which in reality should be set down to his own botching as a builder. Every builder should be compelled to supply rules for the stowage of the vessel he constructs. Till this be the case, stowage *never* can become a *science*.

Upon the subject of "stowage" volumes have been written by the Pseudo-scientific. Indeed, upon this theme, as much paper has been "expended" as would serve to sheath all the line-of-battle ships employed upon the Peace Establishment. And for what purpose?—to prove the notable fact, that those who affect to understand the subject *most*, are *least* understood by professional people. What with the constant misapplication of nautical terms, intermixed with a strong muster of high-sounding phrases, "prest" in support of the several disquisitions published upon the subject, it may be safely asserted, that there is not a single paragraph in print upon the theme of stowage rendered intelligible to the naval reader. One writer, after losing himself in a labyrinth of complicated cases, involving a series of nautical conditions too deep for his fresh-water knowledge, winds up *his* scientific paper in the following *satisfactory* strain:—

"These principles" [mark, *principles!*] "*govern* the stowage of ships; the manner and degree by which they must be carried into *practice* must be *ascertained* by *experiment.*" It is productions of this stamp that bring science into disrepute.

ment,"—bearing in mind that due consideration be given to the several contending conditions involved.\*

If, then, the stower confine the distribution of the ballast to that part of the vessel's bottom, not only nearest to her centre of gravity, but also where her greatest capacity lies, he will find that the application of this principle will not prove very erroneous in practice.

**STOWING OF TANKS.**—The master should be particularly attentive in preserving a strict line of *level* in the position of the tanks. To effect this, and to produce the desired uniformity of surface, the stower must commence the stowage from the midship stanchions in the hold, and work inwards regularly towards the direction of the wings. The

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\* A vessel may steer and stay well, possess considerable stability, stand well up under her canvass, and yet, in other particulars, of equal importance, be extremely defective as a ship of war. She may lurch suddenly, and roll heavily; strain and strand her standing-rigging, if not roll away her masts; and pitch and scend with such violence as to spring or snap her spars whenever opposed to a head-sea. The centre of gravity longitudinally must be also taken into account; few ships will admit of weight being placed in either extremity. For suppose a ship have a sharp entrance, or, in professional phrase, be lean or fine forward, it is manifest that weight placed at any great distance before her centre of gravity must tend materially to augment the force of the pitching motion.

slightest irregularity of surface in the tops of the tanks may be the immediate means of throwing out the general stowage, and of ultimately causing a considerable deficit in the quantity of water which the hold is calculated to contain.

#### DRAWING CABLES.

THE cables should be coiled in the lighter which conveys them to the vessel in the same manner in which they are intended to be *bitted* and coiled in the ship. Experienced officers recommend the method of *crossing* the cables in the hatchway. This system tends to facilitate the operation of “bending and breaking in” the fakes, and afford to the tierers in the tier more room for working and coiling the cables.

CLINCHING CABLES.—Whatever be the number of *hempen* cables which are to be bent to anchors, the master is particularly cautioned to clap on a *clinch-rounding* towards the inner extremity of each cable, keeping three sheaves in the tier. Upon receiving the cables on board, and clinching their respective ends, the master may proceed as given underneath.\*

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\* Pay down three sheaves into the tier, and then clap on a racking lashing to the fore-beam, previously worming and par-



CHAIN CABLES should never be clinched\* in a manner which will not admit of their ends being immediately *disengaged*, in the event of it becoming necessary to "slip," or extricate the ship from her anchors. It may be said that the cable may be unshackled on deck; but it may so happen that the *last* shackle is *without* the hawse, a circumstance which will preclude the possibility of having recourse to this expedient.

#### LOG-LINES.

PREVIOUSLY to marking the log-lines, it is recommended to *wet* them well after they have been

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celling in the wake of the lashing; measure then the cable bitted, and clap on a rounding in the wake, where the cable would bring up in the hawse and chafe in the cut-water. This method leaves room to *freshen* hawse in the event of having to veer to the clinch.

It is a melancholy fact, that more than one frigate during the late war, together with the greater portion of their respective crews, were lost, in consequence of their cables *parting* in the vicinity of the hawse when *veered* to the clinch. Few ships adopt the precaution of clapping upon their cables a *clinch service*. When too late, the necessity of the practice is discovered.

\* A *lashing* will be found to be the most safe and serviceable mode of clinching chain-cables. Should it become necessary to "slip," a sharp axe will achieve all that is required. Some ships *slip* short chains middled round the main-mast, and crossed with two legs; into the end of each "slip-shackles" are inserted. But slip-shackles often *hold* when they ought to *slip*, and slip when they ought to *hold*.

stretched, and to divide the knots into portions of forty-seven feet three inches to the twenty-eight second glass.

### PREPARATIONS FOR LEAVING HARBOUR.

HINTS.—Inspect the tiller-ropes—Shift “hard over” the helm once or twice each way, to ensure that the tiller be not obstructed in its sweep in the gun-room—Place lead-lines in both channels—Point the ends of hawsers up the hatchways, ready for paying out in any direction—Range both bower cables—See placed in readiness for service stoppers (bit and ring)—Examine cat-head stoppers, and shank-painters\* of both bower anchors.

### SHIP TOWED BY STEAMER.

WHEN the ship is towed by a “steamer,” and two tow-ropes are employed and worked at the capstans of the vessel *towed*, care must be taken that a steady carpenter be stationed to attend the “palls” of the capstans. When a sudden strain comes upon the acting hawser, and the palls of the

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\* Should the shank-painters be fitted “slip-shackle” fashion, care should be taken to place people by them who are acquainted with the method of disengaging the anchors.

capstan are not ready prepared to catch, and support the weaker power, the capstan revolves round at a rapid rate, endangering the limbs and lives\* of the men encircled at the bars.

*Note*—For “Fitting Lower Rigging and Sails,” “Transporting Anchors,” and “Stowing Booms,” vide *Boatswain*—“*First Commissioning*.”

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\* Within these few years, some serious accidents have occurred at the capstans of vessels which have been towed by steamers. The safest method of propelling a large ship is to *lash* the steamer alongside of the vessel to *leeward*.

*A Table shewing the Weight of Cables and Anchors used in His Majesty's Ships and Vessels of War.\**

Rate in Guns...	120	80	74	Razee 50	52	46	Razee Corvette. 26	28	Corvette. 18	Brig 18
Hempen, No.	Br. Sum.	5 1	5 1	5 1	5 1	4 1	3 1	3 1	3 1	2 1
	T. C. Q.	29 15 0	25 4 0	25 4 0	25 4 0	25 4 0	9 13 0	6 19 0	6 19 0	4 1 0
Weight.....	Br. Sum.	3 1	3 1	3 1	3 1	3 1	3 1	3 1	3 1	3 1
	T. C. Q.	36 11 0	30 17 0	30 17 0	30 17 0	26 2 0	26 2 0	15 18 0	15 18 0	10 8 0
Iron, ... No.	Br. Sum.	69 13 0	66 6 0	56 1 0	56 1 0	39 3 0	35 15 0	22 17 0	22 17 0	14 9 0
	T. C. Q.	37 3 0	36 11 0	30 17 0	30 17 0	26 2 0	26 2 0	15 18 0	15 18 0	10 8 0
Total weight of the Cables....	Br. Sum.	20 16 2	17 8 0	15 5 0	15 5 0	10 1 0	8 11 0	4 5 2	4 5 2	3 10 2
	T. C. Q.	90 9 2	88 14 0	71 6 0	71 6 0	68 11 2	44 6 0	27 2 2	27 2 2	17 19 2
Anchors...	Br. Sum.	90 9 2	88 14 0	71 6 0	71 6 0	68 11 2	44 6 0	27 2 2	27 2 2	17 19 2
	T. C. Q.	90 9 2	88 14 0	71 6 0	71 6 0	68 11 2	44 6 0	27 2 2	27 2 2	17 19 2

\* Abridged from "Edge's Calculations."

## IN PORT.

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AT SINGLE ANCHOR—MOORED, &c.

VIDE *Officer-of-the-watch.*

## UNMOORING.

UNDER this head, in the chapter entitled “*Boat-swain, in port,*” will be found a few observations, to which the attention of this officer is particularly directed.

## WEIGHING ANCHOR.

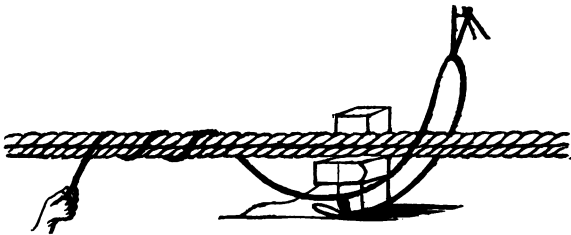
CASTING.—When the wind, tide, and locality of the anchorage admit of the vessel’s casting clear of the shore, shoals, and shipping, it is recommended to defer the operation of *loosing sails*\* until the

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\* In frigates, and flush-deck vessels, the repetition of shipping and swifting the capstan bars is frequently attended with much of unnecessary trouble.

anchor be hove right up, catted, fished, and all the running-ropes are clearly coiled and fairly led for "clapping canvas" on the ship.

**WEIGHING IN A HEAD SEA.**—In weighing with a head sea, the master should take the precaution to have previously prepared a good deck-tackle, or appropriate purchase to affix to the messenger, and assist the action of the capstan. He should also have in readiness a plentiful supply of dry nippers, and have purposely passed and stopped with a rope-yarn over head, the bitt stopper, as represented in the following sketch.



#### CASTING ON CUTTING THE CABLE.

**WHEN** at single anchor in a roadstead, and it be apprehended that, from the direction of the wind, and the local position of the ship with the shore, it may be necessary to have recourse to cutting the

cable, and that casting the *wrong way* would endanger the safety of the vessel, *timely* precaution should be taken to insure the ship casting in the *desired* direction.

To effect this purpose, the stream cable should be bent to that of the riding bower, brought through the after port, and taken round the capstan, in readiness to act as a spring, so as to *cant* the ship previously to cutting. Axes should be placed abaft in the vicinity of the stream cable for the purpose of cutting it after the bower has been severed and the ship's head cast the desired way.\*

#### COMPLETION OF COALS, WOOD, AND WATER.

IT is particularly the province of this officer to attend to the completion of the ship's wood and water. Deficiency in these particulars authorize a timely representation to be made to the captain or commanding officer.—Vide *Purser*.

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\* A slip, or buoy-rope, should be brought up over the "*head*," so that when the cable be cut, a buoy may be left in the roadstead to denote the position of the anchor.

In the winter season, and particularly with a "*falling glass*," it is always advisable to furl with reefed courses and close-reefed top-sails.

## SHIP'S DRAUGHT OF WATER.

SUBSEQUENTLY to every supply of stores, provisions, and water, the master should require from the carpenter a return, in writing, of the ship's draught of water.—Vide *Carpenter*.

## CHARTS, NAUTICAL BOOKS, &amp;c.

THERE are several nautical books *not* supplied by the Admiralty, and of which this officer should be possessed previously to leaving port. Vessels-of-war have been known to put to sea *minus* the "Nautical Almanac;" and ships have proceeded to the South American and East Indian stations destitute of publications touching the localities of either clime. The works of the celebrated Hosburgh should be in the possession of every officer destined for either station.\*

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\* Hitherto, charts were drawn at the admiral's office. This arrangement is about to be altered.

HINT—Examine the charts and books contained in the box before signing a receipt.



## AT SEA.

## ALTERATION OF THE SHIP'S COURSE.

THE ship's course should never be *altered* without receiving the sanction of the captain; nor should the master direct the most trivial change in the position<sup>n</sup> of the vessel's head, without previously intimating his intention to the officer-of-the-watch.

## MERIDIONAL ALTITUDE.

IT is the duty of this officer (though he seldom exacts his authority) to see that all\* the mates, midshipmen, and young gentlemen of the ship be on deck, with their respective quadrants, by *seven*-bells of the forenoon.

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\* It is a mistake to imagine that in obtaining the meridional altitude the deck can be thronged with too many observers.

## LAYING OFF BEARINGS ON CHARTS.

“ FEW masters are at all acquainted with the value of the *protractor* in laying off angles, or bearing of the land on the chart. In narrow seas, such as the Archipelago, where some well-fixed points are almost constantly in view, it is evident that the ‘ship’s place’ can be determined with a greater degree of accuracy by the intersections of this instrument, than by those obtained through the common-place medium of parallel rulers. The latitude may generally be obtained at once for working the longitude, instead of following the usual practice of awaiting noon—a practice which involves all the errors of the log, and which, when the land is in sight, has to depend upon the bearing and *estimated* distance of some single point.” \*

## AZIMUTHS.

“ IT is a mistaken idea, that a ship *must*, of necessity, be very steady to observe an azimuth. In a gale it is difficult, if not impossible; but during strong breezes, and even considerable motion, an azimuth may be obtained by means of Gilbert’s

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\* Unpublished remarks of Sir John Franklin.

prismatic compass. Although, at first sight, the observer fancies the motion of the card sets him at defiance, yet he will very soon perceive that the oscillation has a mean motion, and he can determine to ten minutes what the middle point is. Immediately after taking his sights for time, let him go to the azimuth compass, and, moving the dark reflector, until he causes the sun's reflected image to be seen just on the graduation, watch when the motion becomes sluggish. He should call "stop," and continue to read off, as rapidly as he can, the mean oscillations; calling stop at the tenth. The following shews the form of taking and noting such observations :—

( 9 VII<sub>32</sub> at Sea.

+ P. = with Barlow's Plate ; — P. without do.

h. m. s.	° ' "	h. m. s.	° ' "
8 11 56	86 0	8 12 42	85 00
	85 50		30
	50		30
	30		40
+ P. Head N.	30	—P.	30
	40		20
	40		20
	40		30
	50		40
12 22	40	8 13 8	86 00
Mean 8 12 9	85 43	8 12 55	85 30

	Tacked.		Head S.E.	
h. m. s.	°	'	h. m. s.	°
8 35 50	82	20	8 36 38	82 00
		40		00
		30		40
		20		83 00
+ P. Head S.E.	20		—P	0
		30		0
		00		82 40
		00		83 0
		81 40		10
36 14	82	00	37 12	00
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Mean 8 36 2	82 14		8 36 55	82 45
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

With the apparent time, deduced from the altitudes taken for chronometer, the sun's true bearing is obtained, and thence the variation. If any doubt is thrown on the result, the true bearing may be worked from the altitude, which may be obtained by computation, or by proportion: in the latter case, one altitude should be taken by time after the set is completed.—*Belcher's Nautical Surveying.*

### RUNNING FOR THE LAND.

WHEN running for the land, or *pushing* for a port,\* the master will do well to interrogate him—

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\* In all cases the master should consult the barometer, the indications of the sky, and particularly the rising and the setting of the moon. If "charged with despatches," the captain will be the best judge to balance the risk to be run with the importance of the object to be attained. But the master should not manifest any indecision of conduct, or vacillate in that course which he may himself have previously recommended to his captain. Officers of this grade sometimes urge their commanders to carry canvas for a certain period, and then stop suddenly short, without assigning a satisfactory reason for requiring sail to be shortened, the course altered, or possibly the "ship's head to be put the other way." Such conduct never inspires that degree of confidence which should mutually be felt by the master and captain.

self thus :—“ Is there any object to be attained by running a risk ? ” If the reply be not in the affirmative, the risk then amounts to *rashness*.

#### CLEARING FOR ACTION.

To remedy the mischief produced by “ casualties ” to which the spars, sails, rudder, and rigging of a ship are liable in battle, should be the primary care of the master ; every precaution should therefore be taken that the *spare* tiller, tiller-ropes, and wheel, be in perfect readiness for immediate use, and that the “ relieving-tackles,” “ rudder-pendants,” and “ rudder-chocks ” be prepared for service.

The superintendence of these duties, however essential, need in no way deprive the master of the earliest opportunity to consult with the captain, touching contemplated movements, manner of “ manœuvring,” closing with the enemy, or being brought to battle. In all suggestions offered for the consideration of his superior, it behoves this officer to shape them in clear, succinct, intelligible words. When receiving the captain’s opinions, he should never *affect* to *understand* them, unless he clearly sees their purport. If the method of meeting the enemy’s assault, or bringing him to battle, be not

made manifest, or clearly conveyed to the master's mind, that officer had better confess the fact, than *deceive* alike himself and his commander. Double deceptions are doubly dangerous.

## PRACTICAL HINTS.

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### KEEPING A CLEAR ANCHOR.

THAT part of seamanship which relates to the method of tending a ship to the tide, or, in other words, of keeping the cable clear of the anchor, may not be inaptly termed the *blind branch* of the mariner's art—the buoy floating on the surface being the only visible guide that the seaman possesses to point to the position of the anchor hidden under water.

From being little understood, and, by young officers, seldom put into practice, the art of keeping a clear anchor is by many considered a difficult task. But were lieutenants to give more attention to the matter, and to place less dependence on

the master, or the pilot, they would soon attain every necessary knowledge to meet the most difficult tidal case.\*

#### ANCHOR TURNING IN THE GROUND.

IN order to ensure the certainty of the anchor turning in the ground with the tending or swinging of the ship, it is recommended, whenever it is possible, to resort to the practice "to shoot the ship on the *same side* of her anchor, at each change of tide; for, should the anchor not turn in the ground, the cable will get foul either about the stock or the upper fluke, and trip† it out of the ground."‡

#### TO TEND FOR A WEATHER-TIDE.||

LET it be supposed that a ship is riding at single anchor upon a lee-tide, with the wind in the exact direction of the tide, and that it be required, upon the tide's setting to windward, to tend the ship clear of her anchor. To effect this, as soon as the ship begins to

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\* Though this chapter is here inserted, to preserve the order of the work, it is not intended by the author to confine its perusal alone to the master. The master is supposed to be master of the subject.

† If the anchor be tripped, and the ground be at all "stiff," the probability is, (unless the upper fluke cast downwards, and occupy the position of that already displaced,) that the quantity of clay adhering to the other arm would prevent it again taking hold, or hooking in the soil; and possibly the first intimation the officer-of-the-watch has, that *the ship is walking away with her anchor*, is the awkward discovery of being close in the hawse of another vessel.

‡ Gower.

|| Abridged and corrected from Gower and Hutchinson.



*feel* the turn of the weather-tide, and that the vessel brings the wind broad upon the weather-bow, the head-sails should be hoisted, and then *lee*-sheets hauled aft, in order to shoot the ship from her anchor on a *taut* cable. The helm must then be put a-lee, and kept in that position till the tide settles the ship over to windward of her cable, and the buoy appearing on the same side with her helm.

If, from little wind, the buoy bears nearly a beam, the head sails may be hauled down; but if the breeze be strong, and it causes the ship to shoot in a direction nearly end on with that of her cable, bringing the buoy upon her quarter, it will be then necessary to keep the fore-top-mast stay-sail\* set, in order to check the vessel should she be disposed to break her sheer against the action of her helm, or be inclined to drop to windward, and "go over" her anchor in a broadside or lateral direction.

#### TO TEND WITH THE WIND ACROSS THE TIDE.

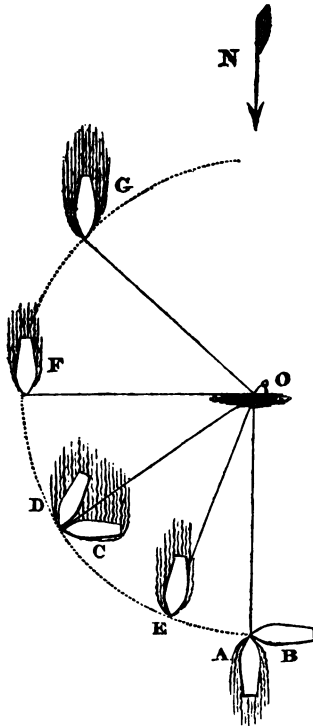
WHEN the wind is across the tide, the simplest and most approved method of tending a ship on both sides, will be to keep the vessel to leeward of her anchor. At each slack water, the ship would become wind-rode; and as she tends and brings the wind on either side, the helm must be put to weather, and the jib, or fore-top-mast stay-sail set, with the sheet hauled over to windward, to force the ship at taut cable from her anchor. When the tide is set, and the ship upon her

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\* When weather-tide slacks, and the ship falls wind-rode, the fore-top-mast stay-sail should be hauled down, and the helm righted.

proper sheer to leeward of her anchor, the jib or stay-sail may be hauled down.

The annexed diagram will serve to demonstrate the preceding rules, and to shew the ship's different tidal positions when riding at single anchor.



Suppose the ship at *A* be riding on the lee-tide with the wind at north,—when the lee-tide is done, and

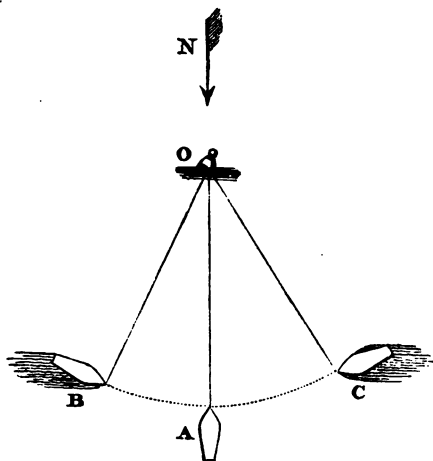
the weather-one begins to set in the direction of *A O*, the coming tide will cant the ship with her head either to the eastward or to the westward,—say the latter, as at *B*. If the ship be left to herself, the probability would be, she would drift *over* her anchor in the direction of her buoy at *O*. To prevent this, it will become necessary to set the head sails with full sheets, in order to shoot the ship gradually over to the westward, clear of the stream of her anchor; but as the tide at the same time will be acting on the vessel in a different direction from that produced by the effect of the head-sails, the former tacking her on the lee beam, and driving her bodily to the northward, whilst the latter propels her head to the westward, it will be seen that a *two-fold* motion is produced till the ship arrives at the position of *C*. As, in this situation, the wind will be on the starboard, or weather quarter, whilst the tide will be acting on the larboard, or lee beam, it will, consequently, become requisite to change the vessel's position, and to cause her to pass with her *heel* over her cable. To effect this movement, the helm must be put to port, when the action of the tide on the *lee* counter, forcing the ship over her cable, will alter her position at *D*,—bringing the buoy, *O*, on the larboard quarter, and the ship's head more immediately presented to the stream of the tide.

Should it blow fresh, or the wind be stronger than the tide, the ship, in all probability, will shoot to the southward, in the position of *E*; while, on the other hand, should the breeze lessen, and the tide become stronger than the wind, the ship will gradually drop with a taut cable in the direction of *F*, or that of *G*.

So long as the ship retains her steady sheer when riding in the position of *E*, she cannot possibly, at slack water, approach her anchor, for she will then be immediately to *leeward* of it, and will, consequently, fall wind rode in the original position of *A*. But should the ship be to *windward* of her anchor in the position of *G*, she will then require the jib, and possibly the stay-sails, to shoot her in the direction of *E*, when, as the tide slacks, she will gradually fall "wind-rode." Should there not be sufficient wind to shoot the ship in the position of *G*, the cable should be hove in to nearly up-and-down and the helm eased as the tide slackens.

When riding on the weather-tide in the position of *E*, it would be necessary to keep the fore-top-mast stay-sail set, to counteract the effect of the ship breaking her sheer, or coming athwart the tide—the object being to prevent the vessel drifting to windward in the stream of her anchor.

The diagram on the opposite page will serve to exemplify the rules relating to the case of tending when the wind is across the tide.



Suppose the wind be at north and in a direction exactly across the stream of the tide,—at slack water, the ship will naturally fall to leeward of her anchor in the position of *A*. But when the tide makes from either the points of E. or W., the ship will swing to the position of *B* or that of *C*. A turn of weather helm, together with the fore-top-mast stay-sail set (sheet hauled over to windward), are the only measures which may be taken to insure a *taut* cable to leeward of the anchor during the entire tide.

#### TO LET GO ALL THE ANCHORS UPON A LEE SHORE.

WHEN it becomes impossible to “crawl off” a lee-shore, and carrying canvas is of no avail,

Hutchinson recommends the adoption of the following practice,\* as best calculated to rescue the ship from her perilous position. After preparing all the cables and anchors, so as to enable the latter to be let go alternately, and dropt at a little distance from each other, and as much as possible in a line parallel to the shore, proceed thus :—

“ Furl the square sails as quickly as possible, and brace the yards full; set the fore-top-mast, fore, and main stay-sails, and put the *helm up*, so as to keep way on the ship, as the cable of each anchor runs out in succession. The anchors pertaining to the cables in the *weathermost* hawseholes should be dropt first.†”

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\* The original text has been considerably abridged.

† The recommender of the above method of anchoring upon a *lee-shore* is silent upon the subject of cutting away the masts. But should the vessel drive after all the anchors are down, and that every precaution has been taken to lighten the *top weight* aloft, the only alternative left is to cut away the spars of the ship. It is *not*, however, advisable to cut the *foremast* away, particularly should there be discovered on the neighbouring shore a favourable spot to *beach* the vessel.

## BAROMETRICAL INDICATIONS.

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THE following observations are abridged from an article which appeared in an early number of the "United Service Journal," entitled a "Popular View of Meteorology, and its Practical uses to the Seaman." The paper is generally supposed to be the production of an officer\* of scientific attainments, and one eminently qualified to treat upon the subject.

"By this faithful guide (the barometer) I even," says the writer, "directed the making and shortening sail, with such precision, that I never once had occasion to turn the hands up in the night; and, during a practice of many years, had cause to rejoice in the implicit trust I reposed in its powers. It is not the absolute *place* of the mercury, however, which must

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\* Captain Wm. H. Smyth, R.N., F.R.S., &c.

be consulted ; but also the convexity, level, or concavity of surface, as indicating a disposition to rise, remain stationary, or fall ; and the time when such disposition *commenced*. The relative situation of the sun must also be considered, as well as the height of the thermometer, though the bracing or relaxing power of the atmosphere, by the forces of expansion and pressure on the leathern reservoir, far surpasses any effect of heat on the quicksilver. Owing to these circumstances, a few general rules for interpreting the movements of the barometer may prove acceptable to beginners, especially as the words engraven on the side-plates rather *mislead* than instruct ; since the true scale will be found also, in some measure, to depend on the season of the year, and the latitudes, as well as height, of the place of observation.

“ From various experiments, the mean pressure of the atmosphere at the level of the sea is estimated at about thirty inches ; and, for common purposes, a tenth of an inch depression may be allowed for every eighty feet of additional elevation.

“ The deviations of the mercury *without* the tropics are greater than those within them ; and are there greater and more frequent in the winter than in the summer. But though slight changes are scarcely shewn near the *equator*, and heavy squalls may occur without being anticipated, yet the approach of a hurricane is foretold by the usual fall of an inch, or more. In calm weather, with inclination to rain, the mercury is commonly low and sluggish. It sinks lowest, everywhere, to extremely violent winds, which may be accompanied by rain ; yet it rises, to north-east and east winds, during which there may also be showers, with-



out any intimation from the quicksilver. When it sinks with the wind in those quarters an alteration will take place.

“ If the barometer has risen during the night, and is still rising, with the hygrometer decreasing, the clouds high, and wind moderate, particularly if it be from the north or east points, a dry day may be confidently expected. The same rule applies from evening until morning. Indications for foul days and nights will obviously be the reverse.

“ Although the rising of the mercury, *cæteris paribus*, is held to presage fair weather, and its falling, especially with an increase in the hygrometer, the reverse, yet it should be noticed, that a sudden rise may sometimes indicate a southerly wind, which often brings rain; but in winter it portends frost; for the quicksilver, from palpable causes, is wont to be higher in *cold* weather than in warm. It must also be remembered, that the daily maximum of the barometer is usually about nine o'clock in the morning,—the mean at noon,—and the minimum at three P.M. When the elevation or depression is rapid, the consequent change will be of short continuance; but slow and progressive variations indicate permanency.

“ In winter, spring, and autumn, the sudden falling of the mercury denotes hard gales; but, in summer, heavy showers and thunder. From the greater variations of the quicksilver between October and April, it follows, that the fall of one-tenth of an inch in summer is as sure an indication of rain, as two or three tenths in the winter. Thunder may happen without sensibly affecting the barometer; but in this case the storm seldom reaches far; and when it is attended by

a fall in the tube, its effects will be found to have been more extensive. If the quicksilver falls very low, although the weather continues mild and moderate, it is the effect of a contemporaneous gale in some distant place. These apparent anomalies account for the charges occasionally made against barometers of giving false alarms.

“ In the *English Channel*, off the *Azores*, and along the *Atlantic* shores of *France*, *Spain*, and *Portugal*, the writer has had repeated proofs of the unerring efficacy of the marine barometer.

“ Between the capes of *St. Vincent* and *Spartel*, the south-west winds are the most disagreeable; but the depression of the quicksilver is sure to denote a violent gale. A gale in this quarter is always precursed by a long hollow swell from the westward.

“ Within the *Mediterranean*, the predominant breezes are from the north and west quarters, except in the spring, when south-east and south winds prevail, but their duration and strength are extremely uncertain about the period of the equinoxes. As the barometer does not generally vary more than a few lines, it requires great attention to mark its indications; they will, nevertheless, prove satisfactory; and it may be laid down as a general rule, that whenever the quicksilver sinks so low as  $29^{\circ} 40'$ , a *severe gale* may be expected.

“ In the *Eastern* division of the *Mediterranean Sea*, the north winds are mostly dry and salubrious, though cold and often violent, while the south one is mild and moist, accompanied by rain; that from the east is laden with mist and vapour, and the western, though often stormy, produces clear skies and exhilarating effects.

The nature of these winds differ essentially according to locality, but they never blow very violently without a corresponding effect upon the mercury.

“ The most annoying wind is the *sirocco*.\* At its commencement the air is dense and hazy, with long, white clouds setting a little below the summit of the mountains, and, at sea, floating just above the horizon, in a direction parallel to it. The thermometer does not at first experience a very sensible change, though it rises with a continuance of this wind to 90°, and sometimes to 95°; the barometer gradually sinks to 29° 60’.

“ In the *Adriatic*, the weather is notoriously mutable: calms, thunder, and water-spouts being frequent all the summer; and heavy northerly blasts, called boras, with fogs and hard squalls, during the winter. The bora † is greatly dreaded in the upper part of the Gulph of Venice, particularly in the channels of the Quar-

\* “ The *sirocco* generally continues three or four days, during which period, such is its influence, that wine cannot be fined, or meat effectually salted; and oil paint laid on whilst it continues will seldom harden.” During a *sirocco*, the Maltese *refuse* physic.

† “ Ships caught by the bora generally let fly every thing to receive the first blast, and immediately bear up to the southward to seek safety in any port they can fetch, or remain under bare poles until it is exhausted. Many prizes during the war were lost by these violent gusts, and some of our cruisers have been nearly laid on their beam ends when caught unawares. In December 1811, the French frigate *Flora*, of 44 guns and 340 men, was surprised by a bora, on her passage from Trieste to Venice, which threw her on the coast near Chiozza, where the captain and two-thirds of the crew perished; and, in 1820, the *Monta Cuculi*, an Austrian corvette, was met by one, while under all sail, and instantly foundered with all hands.”

nero, where it rushes down the whole line of the Julian Alps with irresistible fury. The coming of this wind may be known some hours beforehand, by dense cloud-banks on the horizon, with light fleecy clouds above it, and the sky rather lurid. Its general direction is from north to north-east, and its continuance about fifteen or twenty hours, with heavy squalls, and terrible thunder, lightning, and rain at intervals. These winds, however, give sufficient notice of their approach to an attentive observer, although violent squalls of short duration may be encountered without much barometrical indication."

## OFFICER OF THE WATCH.

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### PRELIMINARY REMARKS.

PREVIOUSLY to enumerating the several duties assigned to this officer, it may not be deemed superfluous to prefix a few words by way of impressing on the mind of the young lieutenant the serious responsibility attached to this important post, and to demonstrate the disastrous consequences, both national and private, which might ensue from even a momentary lapse in his vigilance. He must ever bear in mind, that upon his watchfulness, zeal, and professional skill, will depend much that is of vast political and commercial importance; such as the movements of an enemy's fleet,\* or the

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\* What, for example, might have been the result, had the lieutenant in charge of the *Glatton's* deck lost sight of the

safety of a convoy ; and he must render himself deeply conscious that in his sole keeping are the lives of hundreds of his shipmates, who have no other security, during the helplessness of sleep, than can be derived from his guardianship, and who lie down in their hammocks fully confiding in his care. Considerations such as these are sufficient, it is hoped, to convert, for a time, the most careless (should such unhappily exist in the ship) into the most thoughtful ; and to render the duty of the officer-of-the-watch a sacred trust, to be undertaken with grave earnestness, and discharged with unremitting anxiety.

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Texel fleet? or if, from negligence, the officer-of-the-watch of the *Euryalus* had permitted Villeneuve to evade the battle of Trafalgar?

## GENERAL DIRECTIONS.

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REPORTS.

FOR night and morning reports, vide *Midshipman, and Warrant Officers.*

## OBSERVANCE OF SILENCE.

THE officer-of-the-watch should never permit noise, confusion, or disorderly conduct on deck. In enforcing these prohibitions, he is not, however, recommended to make trivial complaints to the captain.\*

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\* Minor offences may be marked or punished in a manner well calculated to subdue riotous spirits, and benefit the service. With such subjects, double duties below, and extra "exercise" aloft, produce a wonderful *reforming* effect.

## ONE WORD OF COMMAND.

It is much to be regretted, that, in executing evolutions afloat, one identical word of command is not observed by all the officers of the ship. In effecting the *same* evolution, in the *same* ship, two officers will give *two* very different words of command.\* In all ships, any particular evolution should be carried into effect through the medium of one settled form of mandatory words.

## MEALS.—COMFORTS OF THE CREW.

THE officer-of-the-watch should studiously avoid disturbing the ship's company at meals; indeed, he should rather be disposed to extend, than *curtail*, the time allowed for the purpose; and he cannot too constantly consult the personal comforts† of the crew.

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\* For example—In shortening sail upon a wind, one lieutenant will indulge in a long and loud train of mandatory sounds, such as, "Let go the bow-lines in top-gallant sails! Up courses! Down jib and stay sails!" whilst another officer, less disposed to be *noisy*, and more prone to brevity of speech, will content himself, and more effectually accomplish his purpose, by the adoption of the terse phrase, "Shorten sail!"

† Seamen are not deficient in discernment after their own fashion, and are by no means those dissatisfied and ungrateful beings which people unstudied in their character gratuitously assert. The



## MOVEMENTS OF THE SENIOR OFFICER.

UNLESS previous permission be granted "to disregard the admiral's motions," the movements of the flag or senior officer's ship should be closely and promptly followed; and the captain or commanding officer should be immediately made acquainted with all signals\* or movements of the flag or senior officer's ship.

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prompt, cheerful, and willing manner in which a "Watch" will work for one officer, compared with the sullen, dilatory, *drag-drag* performance of similar duties for another, manifest sufficiently the feeling which sometimes sways and actuates the foremast-men in the execution of service, even of the most pressing and paramount importance.

\* The lieutenant-of-the-watch should never authorize nor direct the most trivial signal to be made without the special sanction of the captain or officer in immediate command.

## IN PORT.

## KEEPING WATCH.

COMMISSIONED officers are cautioned not to indulge in the *deceptive maxim*\*—" *Lieutenants are not expected to keep watch in port.*"†

Unless especially released from this charge by the captain or commanding officer, the lieutenant-of-the-watch becomes responsible for every occurrence that transpires upon deck, until regularly relieved by competent authority.

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\* In putting this maxim to the test, many a promising young officer has paid the penalty of his commission. A reference to a recent trial held in B— may probably remove the doubts of those lieutenants who are said to be sceptical upon the subject.

† The *Danemark* (seventy-four) parted from her moorings in Portsmouth harbour, and drifted on the strand of "Common Hard." Luckily for the lieutenant-of-the-watch, he was *not* among the "missing" when inquiry was made.

## CLEARING LIGHTERS.

UNLESS the execution of service more pressing interferes, (and such should always be noted in the log,) lighters pertaining to public departments should be cleared with the utmost despatch, and on no account be unnecessarily detained along-side of the ship.\*

STOPPING-OUT TOP-GALLANT-YARD  
ROPES.

THE practice of permitting the top-men to stop the top-gallant-yard ropes out at their own convenience, and consequently at unstated periods, is at variance with that order and regularity which should ever characterize the duties and discipline of a vessel-of-war. In well-regulated ships, the officer-of-the-watch, following the movements of the senior officer, directs the boatswain, or his mate, to pipe "*out yard ropes.*" If tripping-lines are tolerated, the yard-rope and tripping-line men should "*lie out*" *together*. By pursuing this system, the yards will be kept square, and will not (as is of

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\* Before shoving off from the ship, vessels of this description should be searched.

constant occurrence) be seen, for an hour and a half before sun-set, *topping* in different directions. The same rule should be observed when placing on the lower-yards whips for the hammock gauntlets.

#### ATTENTION TO THE HAWSE.

It is the duty of this officer to pay particular attention to the state of the hawse, and to take every precaution to keep it clear.

He who leaves to chance the tending or swinging of the ship,—neglects to anticipate the effects of time and tide,—delays\* or vacillates in the necessary steps to be taken to insure the vessel going the “right way,” assuredly goes the *wrong* way to work.†

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\* The officer-of-the-watch should bear in mind, that setting the mizen-top-sail or driver, or despatching a warp to the nearest vessel or buoy that bears, are *light* and momentary movements compared to the heavy operation of CLEARING HAWSE.

† In canting, or tending to the tide, the head-sails will be found of little avail. The practice is founded in error: the lever, in fact, is applied to the wrong end. When the wind takes a vessel in a position to preclude the assistance of after-sail, a warp from abaft should be taken out in time. It is true, that, if the wind be steady, the same breeze which (according to the old quartermaster’s “saw” and constant cry) causes “a *cross*” on *one* tide, will take it *out* on the next. But in speculations of this nature the officer-of-the-watch should never indulge, and particularly as the wind generally *changes* with the turn of the tide.

## SINGLE ANCHOR.

IF there be wind sufficient to keep the cable taut, the ship should never be allowed to approach her anchor. Should calm or little wind render ineffective the use of sail, the cable should be "*shortened-in*" as soon as the tide begins to slacken.\*

If, during any period of his watch, there be reason to apprehend that the ship has approached, or *gone over*, her anchor, the officer in charge of the deck should report† the circumstance to the captain, in order that the first convenient opportunity may be taken to "*sight it*."

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\* From the weight of the chain-cable, compared with that of the hempen, the former is less liable than the latter to foul the anchor. But no such speculation should induce an officer to depart from that practice which can alone ensure a "clear anchor."

† From apprehension that negligence or a want of proper precaution may be imputed to the officer-of-the-watch, lieutenants sometimes *omit* to make this official "*report*," an omission highly reprehensible. Incalculable mischief may result from permitting a vessel to remain in a position of *uncertain* security.

## A T S E A.

## CAPTIOUSNESS OF JUNIOR OFFICERS.

IT may not be considered inconsistent with the object of the present work to advert, in this place, to a subject which has occasioned much annoyance, and which has been the source of great irritation among many zealous and well-meaning men. It is this:—A young lieutenant-of-the-watch too often conceives he is upholding the dignity of the profession in general, and his own in particular, by manifesting a petulant jealousy of the interference, during his charge of the deck, of the first-lieutenant. Such captiousness is much to be lamented, not only because it manifests a hasty temper, (the last thing to be desired afloat,) or because it shews ingratitude

for well-meant suggestions,\* but because it evinces an imperfect acquaintance with the established discipline of the service, which gives, in all situations, *superior* command to a superior officer.

#### WORKING THE WATCH IN WET WEATHER.

UNLESS the occasion be pressing, the lieutenant in charge of the deck should as seldom as possible "work the people in the wet." Sail may be readily reduced before the rain arrives; the inconsiderate system of awaiting to ascertain, by proof positive,

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\* For instance, how often when, from anxiety for the public service, has the first-lieutenant, coming unexpectedly on deck, offered a timely or friendly hint, or perhaps even given a *necessary* order, been received by the young and too-consequential officer in such words as these:—"Very well, sir; if you are desirous to take charge of the deck, you had better take the trumpet." This, though it may find favour in the eyes of the foremast men, who, right or wrong, relish what they term a "bit of spirit," will not elevate an officer in the estimation of his captain, nor advance his interest in the service. Besides, such testiness is sure to provoke from the first-lieutenant a rebuke, from which, under the circumstances, there is no appeal. "I intended," this officer may say to his irritable friend, "to give you a civil hint; this you think proper to resent, and therefore you compel me to assume the attitude of command. See, sir, that what I have mentioned, be done *directly*."

Such incidents as these are followed, of course, by mutual coolness at the ward-room and the gun-room table. How much better, then, is it to avoid them altogether, and to let the phrase "*officious interference*" be converted into "*friendly assistance*."

whether there be “ more of wind than rain ” in the coming squall,\* occasions much of unnecessary annoyance and harassing labour to the people upon deck ; to say nothing of the many diseases of which seamen are susceptible, from remaining two or three hours in their wet clothing.

#### PREVENTER BRACES.

It were desirable to establish as a general rule, that when the top-sails are *treble-reefed*, the preventer braces are to be placed on the yards, and that the relieving tackles in the gunner-room be placed at hand, ready for hooking to the tiller.—*Vide Gunner and other Officers.*

#### ATTACHED TO A FLEET.

CHARGE OF THE DECK.—When the officer-of-the-watch has once taken charge of the deck,†

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\* An officer familiar with those *warning* indications which the heavens so constantly present, added to the precaution of deputing the mate-of-the-watch to consult occasionally the barometer below, may spare to the seaman and marine many a “ wet jacket.”

† At night-time, it is not desirable for the officer-of-the-watch to depart the deck for the purpose of calling the captain, or making him acquainted with passing events. The mate-of-the-watch, or an intelligent midshipman, may be deputed to communicate with the captain, or to convey instructions.



nothing should induce him to leave it until regularly relieved, and his successor be put in full possession of his trust. The heedless haste in which the young lieutenant is sometimes seen to resign his charge, as if to seek *sleep*, before his successor is yet *awake*, is sufficient to justify the severest official censure.

#### CONVERSING ON DECK.

To prevent the possibility of the mind of the officer-of-the-watch being abstracted from the responsibility of his sacred charge, he should strictly avoid all interchange of conversation on deck. Attention to the steerage, and sails of the ship, together with the preservation of the vessel's station in the line, (if attached to a fleet,) will be found sufficient occupation for even the most active or inquisitive mind.

Should the ship form part of a fleet or squadron, the officer resigning to another the charge of the deck, should be particular in pointing out the exact position of the admiral, and those of the immediate leader a-head, and the ship next in succession astern. He should also put his relief in possession of every information touching the manner and

means best calculated to keep the ship in her station.\*

**TAKEN ABACK, IN THE ORDER OF SAILING.**—Should the wind head, or neglect on the part of the helmsman cause the ship to be taken aback, and it be necessary to brace round the head-yards “to box her off,” a musket should be immediately fired from abaft, to draw the attention of the ship next in succession astern. Two lights abaft, and one forward, should be also shewn, to indicate the position of the ship’s head. The lights should be kept in this position until the ship be fairly full, and has again “gathered way through the water.”

#### LINE OF BEARING.

To preserve, when sailing large, or by the wind, vide *Captain*—“Tactics.”

#### SUCCESSIVE MOVEMENTS.

WHEN the fleet is about to execute any evolution in *succession*, such as tacking, veering, or altering

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\* The idle and inconsiderate practice pursued by some officers, of permitting the ship to drop astern, or to remain *out* of her station, until the watch is nearly expired, and then setting all sail to recover lost ground, has frequently brought the officer-of-the-watch into “troubled waters.” A quadrant on the fore-castle will always indicate the drawing-up or dropping of one vessel on another.

course,\* particular attention must be paid to preserve the appointed distance between ship and ship in the different columns. This can only be effected by shortening, or increasing sail; for, when a ship tacks, or hauls closer to the wind, it is manifest she will require an increase of sail to preserve her proper distance from her follower astern. Whilst, on the contrary, when a ship is to keep away from the wind, it will be requisite to shorten sail, in proportion as her rate of sailing is increased by "going large."

#### SHIFT OF WIND.

SHOULD the wind *head*, and so derange the order of sailing as to require the line or lines to be *formed* anew, the attendance of the commander, first-lieutenant, and master, will be required upon deck.—Vide "Tactics"—"Shifts of Wind."

#### FLEET ENVELOPED IN FOG.

WHENEVER the fleet becomes enveloped in fog, measures should be taken to prevent separation

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\* In hauling closer to the wind, it sometimes becomes necessary for the follower astern to bear away a little more from the wind from her first course, while her relative leader a-head hauls to the wind; but the extent of this practice will depend on the number of points required to be altered in the change of course.

from the admiral's ship, and coming in collision with other vessels. To avoid the first, and to ensure the hearing of the signal guns of the admiral or commander-in-chief, all noise and hammering, proceeding from artificers' work in the waist, should be immediately stopped. So long as the wind remains steady, and ships are presumed to retain their relative positions of sailing in the line, the prevalent practice of beating the drum,\* or ringing the bell, according to the tack on which the fleet is formed, should be resorted to as seldom as possible.

#### UNATTACHED TO A FLEET.

THE SHIP'S COURSE.—Unless to avoid a sudden danger, the ship's course never should be changed without special directions from the captain. When the master expresses a desire to “alter the course,” such desire should be *sanctioned* by the captain before the movement be made.—Vide *Master*.

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\* The drum may be beating, or the bell ringing, at the very moment the commander-in-chief may be *firing* guns, to direct a necessary and important evolution. The officer-of-the-watch should also be fully prepared to make or shorten sail on the sudden.

VESSELS SURPRISED ON OPPOSITE  
TACKS.

“ IN cases of surprise and danger, from the accidental meeting of two ships on *opposite* tacks in the night, it too often happens that officers are more apt to give orders to the stranger, than to take any measure of precaution *themselves*,—such as *hailing* to put the helm up, or down, and to clear them, when they may be as much in fault,\* and possess the same means of extricating themselves from the difficulty. In situations of this sort, it is much better that *both* parties should put their helms *down*, rather than up; the ships will approach each other for a time, but will diminish velocity, and afterwards separate.”†

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\* Obstinacy or want of judgment in the directing parties, frequently leads both vessels to bear-up at the same instant, consequently causing immediate collision. It is a universal rule with seamen, that, where there is doubt, the vessel upon the *larboard-tack* is to *bear-up* or *heave-about*, for the vessel on the *starboard-tack*. Were this prudent regulation strictly adhered to, and never violated by the obstinacy of parties, accidents would seldom occur. But it sometimes happens that incidental circumstances induce both parties to risk a “trial of skill,” by one endeavouring to weather the other. In these cases doubt and hesitation generally prevail, and disaster is sure to follow.

† Admiral Ekins on *Tactics*.

## A MAN OVERBOARD.

“IF the ship be going free, and particularly if fast through the water, it is recommended to bring-to with the head-yards a-back. It is obvious, if the main-yard be left square, the ship will be longer “*coming-to*,” will shoot farther, increase the distance from the man, and add materially to the delay of succour. It will, however, require judgment, especially if blowing fresh, to be careful and right the helm *in time*, or the ship will fly-to too much, gain stern-way, and risk the boat in *lowering*.” \*

“The best authorities recommend that, if possible, the ship should not only be hove a-back when a man falls overboard, but that she ought to be brought completely round on the other tack. Of course, sails should be shortened in stays, and the main-yard left square. This plan implies the ship being on a wind, or from that position to having the wind not above two points abaft the beam. The great merit of such a method of proceeding is, that, if the evolution succeeds, the ship,

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\* Captain A. Griffiths.

when round, will drift right down towards the man. And, although there may be some small risk in lowering the boat in stays, from the ship having, at one period, stern-way, there will, in fact, be little time lost if the boat be not lowered till the ship be well round, and the stern-way at an end. There is more mischief done generally by lowering the boat too *soon*, than by waiting till the fittest moment arrives for doing it coolly. And it cannot be too often repeated,—that almost the whole depends upon the self-possession of the officer-of-the-watch.”\*

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\* Captain Basil Hall.

## PRACTICAL HINTS.

## TACKING SHIP.

THIS evolution is too often regarded in the light of a mere "*John-Hamilton-Moore*" manœuvre. The preparatory phrase "Keep the ship *full* for stays!" becomes a necessary caution to assist the action of the rudder; but a variety of incidental causes must first be considered by the seamen to ensure the *staying* of the ship; viz., a strong breeze, —a head sea,—ship light forward, and carrying a slack helm, and a swell upon the bow, or beam.

Under any of these circumstances, the officer working the ship should "watch a smooth," before he orders the helm to be "*eased* down;" and never check the head-braces till the luff of the fore-top-sail begins to shake. Nor, in a head-sea, should the



fore-top-bow-line be let go;—this practice tends to impede too soon the ship's way through the water, and consequently to neutralize the action of the rudder. Although in *smooth* water it is always desirable to haul the *after* yards when the wind is a little on the *weather*-bow, yet it is not advisable to follow this practice when tacking in a head-sea, with a swell on the bow, or when the ship manifests a disposition to be *sluggish* in stays. When tacking with a strong breeze, and a "topping-sea," particular attention should be paid to the helm, that it be *righted* in time before the ship gathers stern way.\* The pintles of rudders are constantly damaged, in consequence of officers permitting the helm to remain *a-lee*, instead of righting it a-midships, after the vessel has lost her way. If the ship cannot be brought round by the assistance of her sails, it were better to have recourse to the evolution of wearing, than to endanger the *efficiency* of the *rudder* by this reprehensible practice.

#### WEARING SHIP.

IN wearing in a strong breeze, the officer working the vessel is cautioned *not* to put the helm *up* until the weather main-brace be rounded in, so as to allow the yard to get the "*start*" of the *wind* before it becomes *abaft* the beam. But in rounding-in the weather main-brace, care should be taken not to shiver the main-top sail. The fore-tack should be raised, and the sheet

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\* Dependence is not to be placed in the vane at the mast-head; it seldom indicates when the ship is actually "head to wind." The shaking of the *driver* is the best guide for ascertaining the ship's position with the wind.

eased-off, before the ship brings the wind right *ast*. This will prevent the necessity of "righting" the helm *prematurely*,\* and, consequently, of running over unnecessary ground to accommodate the position of the sails. Steady hands should be placed at the weather head-braces, and precaution taken, that as the ship comes to the wind, the yards are not allowed to *fly* forward against the collar of the stays.

#### PITCHING.—EASING THE SHIP.

GOWER and Griffiths have both exposed the popular fallacy, that in a head-sea the rudder possesses the power of "easing the *pitching* motion of a vessel." "How customary is it," says the latter authority, "to observe the man at the helm easing it down a few spokes, and the officer-of-the-watch *roaring* out 'ease her.'† Ask the generality *why* they do this? and they will probably either say, 'to luff her to,' or be unable to assign any other reason, except that "they have *always seen it done*.'" The "roar" of "*Ease her!*" has been too long allowed to pass current afloat, as a sound

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\* "In blowing weather," says Captain Griffiths, "great attention should be paid in righting the helm at a *proper* time." When wearing with the watch, the same authority very properly recommends the practice of hauling up the lee-fore-clue-garnet at the moment of rising the fore-tack.

† "This practice," says Gower, "must have arisen from its relieving the person who is steering from the weight of the helm, which is greater as the sea passes aft and strikes the rudder; for it is attended with the verbal directions, "*Ease her! Ease her!*" but it does not appear that the *pitching* is the least *prevented*: the helmsman being eased of his burden, it is concluded the ship suffers a general relief. However, it has the advantage of easing the rudder from the sudden jerk of the sea."

of *sense*. It is preposterous to suppose that the *pitch* of the *voice* is to prevent the *pitch* of the *vessel*.

#### BRACING YARDS.

ON A WIND.—In trimming yards upon a bow-line, much will depend upon the strength of the wind and the agitated state of the sea. In a strong breeze, accompanied by a “topping-sea,” it is sometimes desirable to “keep-in” a little of the weather-braces, in order to lessen the lateral impulse of the vessel. But in *smooth* water, with a steady commanding top-gallant breeze, the yards of no ship can be braced too *sharply* up.

GOING FREE.—When sailing with the wind abeam the head-yards may be braced forward to about 45°, and the after-yards to 42°. When the wind is two points *abaft* the beam,\* the fore-yard may be braced to 50°, and the main-yard to 44°.

#### TO TAKE IN A TOP-SAIL IN A GALE OF WIND.

SEAMEN are still at issue as to the preferable practice of effecting this service.

WEATHER CLUE-LINE FIRST.—When the mast is not considered in danger, and the object be to ease the ship, or to save the sail, the weather clue may be *first* lifted. But before *starting* the weather sheet, a prudent officer will always take the precaution to ease first a few feet of the *lee* sheet,† in order to lessen

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\* When the wind is *abaft* the beam, the after-yards should be braced more *forward* than the head-yards, so as to omit the wind filling the sails on the fore-mast.

† The operation of easing the *lee*-sheet may be attended with difficulty, unless the rope be belayed in a manner to admit of

the labour of rounding-in the weather-brace. So soon as the lee-sheet be sufficiently eased as to admit of the yard coming *in* with the weather-brace, and that *both* bunt-lines be as well manned as the weather clue-line, the weather sheet may be then eased off, and the weather clue-line hauled up with every prospect of saving the sail.

LEE CLUE-LINE FIRST.—If there be plenty of sea room, and the ship can be kept away, some officers recommend the practice of bringing the wind abaft the beam, and then hauling up the *lee* clue-line first,—taking the precaution to have *both* bunt-lines well-manned. When this operation is effected, the weather clue-line may be hauled up, rounding the brace in as the ship is again gradually brought to the wind. It will require particular attention to the helm when hauling up the weather clue-line,—though, with judicious management, the helm alone is sufficient to *spill* the sail.

#### TO TAKE IN A COURSE IN A GALE OF WIND.

It is a common practice, in clewing-up a course, to let go the *bow-line* upon starting the tack. Neither the tack nor the bow-line should be *let go*, but each eased handsomely by hand. By the adoption of this practice, the sail will bag less to leeward, and the weather clue be hauled up with greater ease; but both bunt-

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its being eased handsomely by hand. For this reason, the officer who anticipates the necessity of taking in a top-sail in this manner, will do well to cause the easing part of the *lee-sheet* to be taken round the whelps of the capstan, and afterward to the cleat or civit employed for securing the fore or main sheets.

lines should be manned, and even *better* manned than the weather clue-garnet. When the latter geer is well up, walk away with the lee clue-garnet, easing steadily the sheet. But all these precautions will be of little avail, unless there be a good preventer-brace upon the lower-yard; or that the yard-tackle\* be hooked to act as such, and brought sufficiently *ast* to prevent the tackle bringing too great a strain in an up-and-down position upon the upper yard-arm.

TO TAKE IN A LOWER STUDDING-SAIL  
BLOWING FRESH.

THIS is a much nicer operation than young officers are inclined to admit, and unless executed with caution and skill† on the part of the lieutenant "carrying on the duty" on deck, the probability is the top-mast studding-sail-boom will *snap* short in the iron, and that the sail, swinging-boom geer and all, will have to be recorded in the log as "*expended*." When not sailing

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\* Yard-tackles, when used for the purpose of preventer-braces, are seldom hooked sufficiently *ast*. Preventer-braces, properly fitted, are at all times to be preferred to heavy yard-tackles. On wearing, or being taken a-back, or having to brace round the lower-yards in a hurry, yard-tackles become most unwieldy geer.

† A professional writer says, that "a judicious luff, (if with studding-sails set just till their outer leech touch,) at the *precise* moment of giving the order 'shorten sail,' will materially facilitate the performance."

Doctors differ,—why not seamen? But the "*luff*," indeed, must be very "*judicious*" to produce the desired effect; for if, in a strong breeze, the *outer* leech of the sail be brought suddenly a-back, the boom, from having nothing forward to support the spar, will inevitably *snap* in the iron. The laugh then would be against the *luff*.

in a fleet, and the *yawing* of the ship be a matter of minor moment, the officer-of-the-watch is recommended to proceed as follows :—

Place a steady helmsman at the wheel, and stand close to him—man well the sheet, and lead it well aft along the deck ; see that steady hands attend the tack and guys. When perfectly prepared, direct the helmsman, with a “small helm,” to bring the wind gradually on the *opposite* quarter, and the moment the body of the sail begins to lose the breeze, and the canvas inclines to shiver, *lower* the outer halliards, ease the tack, and haul in upon the sheet as rapidly as possible, lowering the inner halliards at the same time. More booms are sprung, and even snapped short in the iron, from the sudden jerk produced by lowering the lower halliards, when the sail is straining and bellying to the breeze, than by even carrying a powerful press of canvas. And here it may be well to impress upon the mind of the young seaman, that there is hardly a situation in which a ship can be placed, that a judicious management of *the helm* will not facilitate the execution of the service sought. Physical strength may be always aided by the commanding power of the helm.

#### TO UNBEND A TOP-SAIL IN A GALE OF WIND.

THOSE who know the value of *minutes* to men perched aloft in a perilous position, will adopt that method which will, eventually, cost the least time and the least trouble. The sail should be *first* furled, then detached from the yard, and sent down on deck (slung amidships) by the long-tackle hooked at the top-mast-head, and steadied forward clear of the top-rim by the

weather or lee bow-line, according to the side on which the sail is to be sent down. Should the ship be rolling or pitching to any extent, and it be not deemed prudent to lower the furled sail "*before* all," the top hatches may be opened, and the sail sent down through lubber's hole. This method will entirely depend upon the motion of the ship.

#### SCUDDING IN A GALE.

WHEN scudding in a heavy gale of wind, care should be taken that sufficient of *lofty* sail be carried on the vessel to keep her freely and fairly *before* the sea.

The canvas usually carried upon these occasions is, a close-reefed main-top-sail, and a reefed fore-sail :—but there are times when this sail is not the best suited, nor safest for scudding. Ships that steer badly, and manifest an inclination to *yaw*, will be more steadily steered and easily managed when scudding under the fore top-sail and fore-stay sail. Should the ship happen to broach-to, the *fore-sail*, in such a perilous position, is an unwieldy and unmanageable sail to clue up, and when the sea strikes the ship upon the quarter, and causes her head to round-to in the direction of the wind, the main-top-sail tends to *assist* the sea in producing this dangerous movement ;—whereas, the fore-stay-sail, together with the fore-top-sail, produces the contrary effect.

As, in scudding, the safety of the ship will entirely depend upon her steerage, the greatest care should be taken that a steady and expert helmsman be stationed at the wheel, and that when his "*trick*" is out, and his "*relief*" arrives to take his place, that he *resigns* not his

hand at the helm until his successor be in full possession of the easiest method of steering the ship. The officer-of-the-deck should also direct a compass to be placed in the gun-room. and be cautious that competent seamen there attend to the relieving tackles, and watch closely the steerage of the ship by the compass card.

In frigates, and particularly flush-decked vessels, whose binnacle-lights are liable to be extinguished by the gusty gale, precaution should be taken that lighted lanterns be kept in readiness to supply the place of the blown-out lights. On dark and starless nights, when the steersman has no other guide to govern his steerage than the compass-card, it is of the utmost importance that attention be paid to this particular. In seven cases out of nine, the accident of *broaching-to* may be traced to the "*blowing-out*" of the binnacle lights.



## FLAG-LIEUTENANT.

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### PRELIMINARY REMARKS.

It too often happens that this officer considers his situation as a sinecure, the passport to which is *interest* rather than *merit*. The former, indeed, frequently governs the appointment, while the latter is overlooked. But were the serious responsibilities of the flag-lieutenant duly considered—were the various requisites he should possess properly estimated, the choice would fall, not on the man of connexion, but on him who could manifest the greatest professional skill.

The flag-lieutenant should be conversant in the routine of every duty afloat, an adept in briefly communicating orders by signals, and, above all, a thorough master of the evolutions of a fleet. He is the admiral's aid-de-camp.

## IN PORT.

## CIRCULATION OF WRITTEN ORDERS.

PERIODS best suited for the promulgation of public orders, or of copying "circulars," are too seldom consulted by this officer. Lieutenants too are sometimes summoned to copy "orders," which might be more appropriately copied by the midshipmen of the fleet. Before the flag-lieutenant calls upon officers to undertake duties in opposition to *time* and *tide*, he should ascertain whether the nature of the service demands such pressing attendance.\*

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\* This inconsiderate and ill-timed call for officers to copy orders (possibly a *rescinded* "circular") constantly causes a small vessel, when blowing fresh upon a lee-tide, to *despatch* a double-banked boat's crew to convey the *copying-officer* on shore. Thus is a vessel liable to have her ablest hands broken off from an essential duty, because the flag-lieutenant has not sufficient discrimination to perceive that the *important* document might be copied at a more suitable period, and one less calculated to excite discontent, and to impede the "fitting" of the ship.

## A T S E A.

## CEASELESS SUCCESSION OF SIGNALS.

A CEASELESS succession of signals not infrequently fails to attract attention. A well-timed signal is like a well-timed mandate,—one word of command is worth a thousand repetitions of verbose blustering.\* The same remark is equally applicable to orders and directions conveyed through the medium of signal.

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\* This officer sometimes indulges in the erroneous supposition that so long as he parades the poop, keeps the signal-halliards constantly "stirring," and the bunting "flying in all directions," he "renders the state some service."

The following anecdote will suffice to illustrate the force of the above observations:—"On one occasion the 'Excellent' was directed to weigh, when off Cadiz, and to close with the admiral's ship; and, in running down, the signal was made *five* or *six* times for altering the course, first on one side, and then on the other,

## TACTICAL MANŒUVRES.

UPON all matters touching the movements and manœuvres required to be performed by the several ships composing a fleet, the flag-lieutenant should be perfectly competent to communicate, by signal, the intentions of the commander-in-chief. In performing tactical evolutions, false movements and misplaced positions constantly occur from inability on the part of this officer to select the proper signal necessary to direct the desired movement.

To remove this reproach, this officer is counselled to exercise his mind in evolutionary movements,—to acquire a proficiency in that portion of tactics which treat of the restoration of a dis-

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and at length for a lieutenant. Captain Collingwood, who had been observing this in silence, ordered his boat to be manned, as he would go too. On his arrival on board, he desired the lieutenant, when the order was copied, to bring it to him; and he read it while he was walking the quarter-deck with Lord St. Vincent and Sir Robert Calder. It was merely an order for the 'Excellent' to receive on board two bags of onions for the use of the sick; and, on seeing it, he exclaimed, 'Bless me! is this the service, my lord?—is this the service, Sir Robert? Has the *Excellent's* signal been made *five* or *six* times for *two* bags of onions? Man my boat, sir, and let us go on board again!' and though repeatedly pressed by Lord St. Vincent to stay dinner, he refused, and retired."—*Lord Collingwood's Letters*.

turbed "order of sailing," or the renewal of a "line-of-battle," broken by shifts of wind.—Vide Chapter "Practical Hints," under the head of "Shifts of Wind."

#### REPORTS.

**MORNING.**—It is the duty of this officer to report, at day-light, to the captain of the fleet, the exact position and order of the several ships composing the different columns, in the order of sailing. He should also represent to his superior any apparent irregularity in the relative distances the ships of the fleet are required to preserve: Those not considered in their respective stations should not only be reported to the captain of the fleet, but also regularly noted in the "Remarks" of the signal log,—stating particularly, the *time* the vessel is first discovered to be out of her station, as well as the exact period at which it is resumed.

**EVENING.**—The position of the fleet,—ships detached, whether on the "look out" or in chace, together with strangers in sight, are reports which at sun-set this officer is required to make to the captain of the fleet. Upon the same occasion, it is customary for the flag-lieutenant to lay the "*signal-*

*log-book*" before his superior.—For "Preparations for Night Signals," vide *Signal Midshipman, at Sea*.

#### EXERCISE OF EVOLUTIONS ALOFT.

WHEN the ships of the fleet are exercised in evolutions aloft, and the "time be given," through the medium of signal, the flag-lieutenant should never resort to the partial and deceptive practice of keeping the "*preparative flag*" flying for several seconds after the movement has been commenced on board of the admiral's ship. This is an unfair advantage, which no flag-officer who can appreciate emulative exertion will ever sanction.\*

#### FOG AND NIGHT SIGNAL GUNS.

IN making fog and night signals through the medium of sound, or rather the report of cannon, the flag-lieutenant is strictly cautioned to cause the signal guns to be discharged on the *same* side of the ship. This is of the first moment, particularly when the purport of the signal is immediately made

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\* Young officers are in error when they think old eyes are unable to detect this deceptive practice. — The hint is well intended; emulation should never be "robbed of its fair proportions."

to depend upon the interval of *time* which elapses between the reports of the several guns intended to be discharged. For, if two guns be fired from to windward, and two guns from to leeward, (*four* reports composing the signal,) a sensible difference will take place in the position of the sound. The first and second weather-guns may be altogether lost to the ear, and the *third* report, which will be the *first* gun fired from the *lee* side, may be taken for the *first* report of a signal supposed to be conveyed by the medium of two *equi-distant* discharges.\*

#### TELEGRAPHIC SIGNALS.

VIDE article, addressed to the *Captain*, "Communicating by Signals;" also "Telegraphic Signals," under the head of *Signal Midshipman*.

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\* "Significations" have been often mistaken from the report of guns "going for nothing." It is to be hoped, that the hint here will go for *something*.

## FIRST - LIEUTENANT.

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### PRELIMINARY REMARKS.

“**FORESIGHT, FIRMNESS, TEMPER, & METHOD.**”  
 These words should form the motto of the first-lieutenant. Possessed of the first, he will seldom be taken by surprise, but will have anticipated, either wholly or in part, whatever circumstances require prompt and decisive measures.\* The

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\* The following anecdotes are given in illustration of the above, and will demonstrate the necessity of *foresight*, not only in respect of the vessel under the charge of the first lieutenant, but as regards others. The “C—q—r” (seventy-four) had been just commissioned at Sheerness, and the “M—d—g—r” frigate was refitting in the same port, and moored at a little distance from the former. The first-lieutenant of the “M—d—g—r,” seeing a *man fall* from the main-mast head of the “C—q—r,” and suspecting that a ship so newly commissioned might not have a medical officer on board, (which turned out to be the case,) immediately despatched the gig of the frigate with the assistant-surgeon and



second will confirm his character for efficiency, ensure a due obedience to his orders, and preserve the necessary discipline of the ship. By a manifestation of the third, (a quality scarcely less essential than the others,) a cheerful alacrity in the execution of arduous duties is ensured; while, by the fourth, labour is lightened and despatch promoted. It may not be superfluous to add to the above; that, as this officer is the president of the ward-room mess, the decorum and general comfort of the table will depend mainly on the gentlemanly manners of the first-lieutenant. Whenever his authority may be required to repress conversation on topics\* likely

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necessary apparatus to the vessel in question, and by this prompt measure saved the life of the man who had fallen from aloft.

On another occasion the same officer, perceiving a frigate getting under weigh, and, from the direction of the wind and run of the tide, conjecturing that the ship would cast the "wrong way," and consequently ground on a neighbouring shoal, instantly prepared the stream-cable and anchor, and despatched the launch to the frigate. No sooner had the boat reached alongside with the necessary means of assistance, than the ship *struck on* the shoal; and the captain, not imagining it was possible that relief could be already at hand, ordered a gun to be fired as a signal for aid. His astonishment at finding that the calamity and the succour occurred simultaneously may be easily conceived.

\* The prevailing disposition to discuss politics afloat is truly deplorable. In former days, it would have been difficult to find a naval officer competent to define the difference existing between Whig and Tory; but now, party questions are introduced at table, and disputed with a warmth and testiness of temper that would hardly be tolerated *even* in St. Stephen's.

to lead to irritation, his interference should be *timely*, and tempered by address and mildness, or otherwise he may only fan the flame he seeks to extinguish.

His interposition, indeed, upon all occasions, should be cautious and considerate, and never employed unless on the most urgent necessity. In speaking of the duties of the lieutenant-of-the-watch, that officer was admonished not to shew impatience or testiness of temper, should his superior offer any suggestion during his charge of the deck ; but if this subordination be necessary on his part, so should the senior officer bear in mind, that he should not interpose his authority except when absolutely called for, and never display it officiously or vexatiously. He is, however, on all occasions, to consider himself the *executive* officer, through whom all points of service must be fulfilled.

## GENERAL DIRECTIONS.

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### COMFORTS AND ACCOMMODATION OF THE CREW.

THE first consideration of this officer should be the personal comforts of the crew. When the foremast-men perceive that the chief directing officer has their comforts at heart, that officer may rest satisfied that he can always command a *willing* obedience on occasions when an extraordinary exercise of physical force is required. The senior lieutenant should also afford to the subordinate officers every accommodation which may add to the respectability of their several stations.

### MAINTENANCE OF SYSTEM.

THE commissioned, warrant, and petty-officers should be severally impressed with the necessity of

observing *system* in the execution of every service. System can never be maintained afloat, unless the heads of departments consult with the senior lieutenant, prior to the performance of contemplated duties.

#### DAILY REPORTS\* AND INSPECTIONS.

A RIGID observance touching "Reports" of service *performed*, is highly essential in the maintenance of order and discipline. "Reports" should not be considered, nor received, as mere matters of *form*. There is a wide difference between things done, and things left "undone."†

#### ROUTINE OF DUTIES.‡

REGULARITY in the routine of ordinary duties should be studiously observed. However trivial the service, or light the labour, it behoves this officer to be punctual in carrying into execution the desired

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\* Vide formula at the close of this chapter.

† For example, the mate-of-the-lower-deck may "report" to his superior the hammocks as "*all hung up*;" when, had the *inspecting* officer first stepped *forward*, instead of aft, from his berth, his eye might have lit upon half-a-dozen of hammocks lying under the fore ladder in close contiguity with the *sweeper's* basket.

‡ A formula will be found at the end of this chapter, which may serve to illustrate the manner in which *routine duties* may be carried into effect

task. In varying the time for the discharge of ordinary duties, the variation should never appear to proceed from the dictates of *caprice*. Regularity is the soul of the service.

#### PRESERVATION OF SILENCE.

IN the execution of evolutionary movements, the strictest silence should be observed. Were the junior lieutenants in their respective stations to indulge less the disposition to *hail aloft*, duties would be better performed, and the discipline and *character* of the ship be better preserved. On no account should petty officers be permitted to call from the deck to the tops, or to the mast-head. The practice of allowing the fore-mast men to hail aloft upon every occasion that a hauling-line may be required, speaks little for the internal discipline of a vessel-of-war. Nor should the top-men's predilection to sing out from *aloft* be at all indulged. Ropes are much sooner disengaged on deck by means of a *tell-tale shake* from\* overhead, than

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\* A first-lieutenant, celebrated for his love of silence afloat, was accustomed to follow a practice well calculated to insure *taciturnity* aloft. He made it a rule never to set a bad example by roaring out *silence* himself, knowing full well the little worth of words upon these occasions. When a topman indulged in chatter aloft,

by indistinct hails, or shrill shouts from the mast-head.

### INDISCRIMINATE CALLS.

VIDE *Midshipman*.

### THREATS OF PUNISHMENT.

THERE is in some men an infirmity with regard to perpetual threats of punishment, which constantly places the threatener in what may be termed a false position. In the heat of the moment such men indulge in unguarded language, which is generally followed up by strong asseverations to have the party addressed "severely punished." Such manifestations of uncontrollable temper pro-

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or hailed the deck from the mast-head, the name of the "roarer" was quietly noted, and nothing said of the matter till the ship returned to port, and the offending party applied for leave on shore.

"I hope, Mr. ———, you'll grant me liberty ashore—I've always done my *dooty* like a man."

"You have always done your duty like a *noisy* man, and therefore you don't go."

"I never remembers makin no noise, sir."

"I know *you* don't, but *I* do. Do you remember Friday fortnight, at two bells in the forenoon watch, bellowing out, like a bull, 'Let go the larboard main-to'-gallant clue-line!?' Now, my man, you well know that shouting from aloft is contrary to orders, and that a good *tell-tale* shake of the rope would have had it much *sooner* disengaged on deck." The same officer adopted a similar system with young gentlemen of *wordy* habits: those who exercised their *lungs* afloat, were seldom permitted to exercise their *legs* ashore.

duce no other effect upon the fore-mast-men save that of an unfavourable opinion of the utterer's self-possession, added to a total, though silent, contempt for his waste of words. Threats of punishment are always bad, particularly, as the threatener has seldom reason, on his side, to support his menace, or rather the infliction of a punishment promised in a moment of heat or irritable mood of mind. And here it may be recommended to the young officer, never to permit an expression to escape him which may afterwards involve his character for adherence to truth. An officer should never break his word, and particularly with British *seamen*.

#### COMPLAINTS.

COMPLAINTS should be submitted to the senior lieutenant; and, on these occasions, the exercise of no ordinary discretion will be required on the part of this officer to maintain discipline, and satisfy the ends of justice. Officers have constantly to listen to complaints of the most *trivial* nature, which the complaining party, in a less irritable mood, would probably dismiss from his mind, as unworthy of official interference. Under these circumstances, the senior lieutenant had better reserve his decision

till more of coolness be displayed on the part of the complainant.

#### THE USE OF IRONS DEPRECATED.

IRONS for confining prisoners should seldom, if ever, be resorted to, except in cases of serious crime. Men have been "clapped into irons" for offences comparatively of a trifling nature, even in instances when the offence has been committed at sea, and the custody of the offender of little moment.\* By this practice the ship is deprived of the man's services pending confinement for petty offences, for which an allotment of extra duty might be substituted with the best possible effect. Moreover, it should not be forgotten that the confinement itself is no trivial punishment, and that every punishment pre-supposes crime. The prisoner has, subsequently, to undergo a trial for his offence, and possibly may prove himself innocent, to the full satisfaction of all parties. The system of con-

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\* "Irons," says Captain Griffiths, "are at all times a disgusting sight. If circumstances do not allow of complaints being investigated at the time, let the master-at-arms report the offenders as prisoners at large; they then perform their work, sleep in their hammocks hung up, and, if pronounced innocent, no injustice is done to the individual."



sidering offenders in the light of prisoners at large, will always afford to the commanding officer an opportunity to exercise some well-timed act of clemency. Serious offences, subversive of discipline,\* are not, however, recommended to be overlooked.

#### CLEANLY CONDITION OF THE SHIP.

WASHING DECKS.—A vessel-of-war should be strictly clean, and by her internal and external appearance indicate that order and regularity reign within. Let not utility be sacrificed to *show*. Slopping, scrubbing, and stowing, are pastimes too prevalent on board of His Majesty's ships. Such pursuits may delight the heart of the senior lieutenant, but they contribute little to the health or comforts of the fore-mast men; were this officer more often to bear in mind the *season* of the

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\* In large ships, when folk indulge "a little in the like o' *likor*," and are consequently loud in language calculated to offend "ears polite," the local habitation of the declaimer should undergo change. Declamation has been often practised in private in the regions below. In former days, before "*the march of intellect*" found its way afloat, declaimers were wont to be consigned to the coal-hole; and the admirers of a certain senator, celebrated for his "love of *liberty*," were frequently doomed to descant upon his doctrines, albeit without an auditory, between "wind and water."

year, before he proceeds in the "ways of water," and the sports of sand, less of dissatisfaction and sickness would prevail afloat.\*

**DRY HOLY-STONING.**—The propriety of pursuing this system of cleansing the under-decks has long been disputed by officers who have studiously sought the preservation of their people's health. Those who deprecate the practice, contend that, during the process of grinding the heated sand into the grain of the planks of the deck, a considerable quantity of gritty sharp particles is inhaled by the "stoners" on their knees.

Dust, in any shape, is always injurious to health; and in cleansing the under-decks, the only question to determine is, which is the *lesser* evil of the two, *dust* or *damp*. In wet wintry weather, if decks be cleaned through the common-place medium of cold

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\* In well-regulated ships, the operation of "stoning" the decks in winter is never performed by the people composing the morning watch. If the ship be in harbour, the decks are stoned twice in the week, commencing immediately after breakfast, with all hands, or by a general muster at quarters. By pursuing this system, the decks are permitted to dry, and not doomed to become damp and water-soddened, by wetting them before there be drought in the air. Ships on the home-station, whose decks in the winter season are washed in the morning watch, seldom can boast of a *dry* plank between the months of October and April. This fact is in itself sufficient to win converts in favour of the practice here recommended.

salt-water, they will remain moist during the entire of the day, and humidity between decks is sure to produce disease. On the other hand, the clouds of floating dust in which the fore-mast men are enveloped whilst *whitening* (not purifying) the planks of the deck, must materially affect the eyes, if not the *lungs*, of the several grinding\* gangs distributed fore and aft the vessel.

Between the two methods of cleaning the lower-deck, some officers have pursued a system which in all weathers has been found to work well.

The method is as follows :—As soon as the ship's company have breakfasted, (the meal commencing at seven bells in the morning watch,) the ship's cook heats a sufficient quantity of salt-water in the coppers, which, when nearly boiling, is distributed in portions to the different messes fore-and-aft on the lower-deck. Hand-brushes are then employed to scrub the deck ; whilst other parties, with pieces of old blankets or woollen rags, soak up the fluid. When the work is completed, the people are ordered to retire upon the upper-deck, whilst wind-

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\* An inconvenient result follows the labour of dry-rubbing, of which possibly the uninitiated are not altogether aware,—namely, perpetual *scratching*. Naturalists say fleas *thrive* in sand, and are always “ industrious ” in *dusty* regions.

sails or stoves are placed to dry the "tween decks" below. But, with hot water, stoves are seldom requisite. The weather must be very humid if the planks of the deck do not almost immediately dry, because evaporation is the quicker in proportion to the heat of the fluid employed. In summer weather, or in warm climates, the practice of dry-rubbing the decks should never be resorted to.

#### TEASING THE TIME.

THE practice of constantly working the ship's company with the view "to keep the *devil* out of the minds of men," as little-minded men imagine, is, to say the least of it, false philosophy. He that pursues such system, knows little of the nautical character, and of human nature certainly less.

"Refitting, squaring yards, stowing stores, working boats, and drying sails, with all the minor minutia daily incidental to a ship-of-war, leave little of leisure for the repose and recreation of the crew. Seamen know well enough what is necessary, and therefore do not relish a too frequent mustering of hammocks and bags, stoning of the decks, and other artificial modes of teasing the time." \*

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\* Published Letter of Captain Philip Beaver.

SUBSTITUTING THE HANDS FOR THE  
WATCH.

WHEN the physical strength of the watch is unequal to carry into effect a heavy evolution, and it be required to "turn the hands up" to perform the service sought, the first-lieutenant should studiously\* avoid keeping the "watch below" longer on deck than is absolutely necessary.

EXERCISING THE YOUNG GENTLEMEN  
ALOFT.

Two days in the week should be set apart in all ships for the exercise of the young gentlemen in evolutionary duties aloft; and in this practice† of

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\* A ready disposition to relieve "the hands" from unnecessary labour is soon perceived, and always appreciated by the fore-mast men. Indeed, the hands should never be turned up, or the people disturbed from their private occupations below, unless it be manifest that the physical strength of the watch upon deck is too feeble to perform the duty required. "Turn the hands up!—*in this!*" or "*out that!*" is a mandate which has hitherto been too "trippingly on the tongue" of the first-lieutenant.

† The advantage of practice over theory is manifest. "How many midshipmen," says the author of '*Points of Seamanship*,' "nay, lieutenants, perhaps captains, are there, who never sent up or down a top-gallant-yard or mast in their lives? A midshipman is usually stationed in one of the tops, in order that he may learn the duty of a seaman. What does he do there?—Takes his station on the main cap, calls out 'Haul out to windward!' 'Bear a hand!'

the art of seamanship and that of rigging, care should be taken by the commanding officer that such exercise is not to be considered (as is too frequently the case) in the light of punishment for misdemeanors on the part of the midshipman, but purely as a necessary instruction to form the seaman and constitute the officer.

#### EXERCISING YOUNG GENTLEMEN AT GREAT GUNS.

STATED days should be devoted to the instruction of young gentlemen in gunnery, and they should be compelled to work and exercise a gun on the fore-castle, under the immediate superintendence of an officer competent to impart instruction; and whenever the ship's company fire at a mark, the midshipmen should be allowed to practise at the target.

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'Lie in off the yard!' and 'Down out of the top!' And in this is comprised the whole of his exertion."

When the first-lieutenant, as is by no means an uncommon occurrence, complains that he "has not a midshipman whom he can trust in the execution of a single service connected with seamanship," he should bear in recollection that the *fault* rests more with himself than with the young gentlemen whom he so impatiently denounces.

## FORMULA OF DAILY REPORTS.

## MORNING.

**BOATSWAIN:** Rigging—Sails—Anchors, and Boats—  
State of.

**CARPENTER:** Spars—Decks, &c., State of.

**GUNNER:** Main-yard-guns—Ports—up or down.

**10<sup>h</sup> 30<sup>m</sup> A. M. OFFICERS:** Superintending Divisional  
Quarters—Report Guns, as exercised and secured.

## EVENING QUARTERS.

**COMMISSIONED OFFICERS:** Report people at their re-  
spective quarters sober—Gun-geer and implements  
properly placed for action.

**MASTER** to report wheel-ropes effective—Relieving-  
tackles at hand—Stoppers &c. in readiness for  
service.

**BOATSWAIN:** Rigging-stoppers—Luff-tackles at hand  
—Toggles on the lower and top-sail braces—  
Earings and sheets effective—Standing and running-  
rigging fit for service—And boats clear.

**CARPENTER:** Pump-well — Ports — Boats — Hawse—  
Bucklers — Wings — Fire-screens — Fire-engine —  
Pumps—Shot-plugs.

**GUNNER:** Guns—Gun-geer — Magazine-men — Life  
buoy.

**SIGNAL MIDSHIPMAN:** Triangle traced up — Signal  
Lanterns ready for service—Two guns unshotted  
on each side of the main-deck—Rockets and blue  
lights ready.

**SECOND MASTER, OR MATE OF THE LOWER DECK ;**  
Tiers clear—Spare-sails ready for sending aloft.

**MASTER-AT-ARMS:** Hatches—Steward-room and store-  
room locked.

DUTIES ASSIGNED TO EACH DAY  
IN THE WEEK.

**MONDAY:** Scrub hammocks—Watch on *deck* to be exercised at a division of guns—forenoon or afternoon, as may be directed by the commanding officer.

**TUESDAY:** General exercise of sails—If in harbour, loosing and furling for half an hour, during the fore-noon watch—If at sea, making and shortening sail for the same interval of time, during one of the dog-watches. When the ship's company become practised in these operations, once a fortnight will be sufficient to follow up either exercise.

**WEDNESDAY:** Boats' covers to be scrubbed; also, oars with sand—Small-arm's men to be exercised for half an hour in each watch—the watch on deck only.

**THURSDAY:** Ship's company to mend clothes—Young gentlemen to be exercised at evolutions aloft.

**FRIDAY:** Boats' crews to fall-in armed, and to be exercised with cutlass and musket.

**SATURDAY:** Wash lower-deck—Young gentlemen to be exercised at a gun on the fore-castle. Evening, —Ship's company to sling clean hammocks.

N.B. The bedding of the men to be aired the first Saturday in each month.

**SUNDAY:** Divisions—Church, &c.



FIRST COMMISSIONING.

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IN order to prevent repetition in detailing those duties incidental to a vessel's "*first fitting*," as well as to preserve that classification so essential to a work of this nature, the first-lieutenant will frequently be referred to those chapters addressed to officers inferior to himself. And in this place it may be necessary to remark, that in the progress of a ship's equipment, the senior lieutenant will neither be in error, nor in any way in arrear, if he enforce from the heads of departments a strict observance of those injunctions relative to *pre-arrangement* on all matters connected with the execution of duties.

## HOISTING THE PENDANT.

SHOULD the senior lieutenant be the first officer to arrive at the port in which the ship is about to be commissioned, he will be required to proceed forthwith to the commander-in-chief, and apply for authority to hoist the pendant. Thus authorized, he should repair to the office of the superintendent, of whom he will receive the desired symbol of commission; which is to be hoisted, upon obtaining the sanction of the superintendent.

## OFFICIAL DEMANDS.\*

IN the event of the captain's clerk, or purser, not being present upon commissioning the ship, the circumstance should be made known to the commander-in-chief. No impropriety can be imputed to the application for a clerk from the flag-ship, to perform, *pro. tem.*, the indispensable duties incidental to commissioning.

## ABSENCE OF THE CAPTAIN.

IN the absence of the captain, it will be the duty of the senior lieutenant to make his appearance every

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\* Vide CAPTAIN'S CLERK.

morning at the port-admiral's office, to inquire for orders, and receive instructions upon any particular point which the commander-in-chief may deem expedient, touching the vessel's equipment.

In the entry of men, care should be taken that such as may desire to volunteer for the ship be not deserters from other vessels-of-war, and that they can shew satisfactory certificates of capacity\* and conduct.

#### STOWAGE OF BALLAST AND TANKS.

VIDE—*Master and Carpenter.*

#### DOCK-YARD ARTIFICERS.

VIDE—*Carpenter.*

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\* The senior lieutenant should not neglect to interrogate individuals touching their professional pretensions. Many men-of-war's men, upon desiring to enter, assert that they can hand, reef, and steer, "and, moreover, that they have *saved* their time to the sea;" yet, when their pretensions are put to the test, they can neither take the helm, heave the lead, pass an earing, nor strop a block. Upon these occasions, an officer of discernment will soon discover the difference between a *self-satisfied* seaman and a seaman that will satisfy the service. A lead-line put into the hands of blue-jackets of this stamp will readily remove doubt, and decide the *ordinary* pretensions of the "A. B.'s" ability. But the manner of shaping professional questions should never partake of sneer; nor should the interrogated be ever derided. A practical mariner will never put to an individual whom he suspects to be a thorough seaman any question that will not produce a reciprocal feeling of respect for the professional abilities of both.

## STOOLS AND TABLES OF THE MEN.

THE stools and tables allowed to the ship of the line, should be fitted on a totally different principle from that which is usually adopted for the use of the frigate and the flush-decked vessel. Tables of the ship of the line may be so constructed as to admit of their being traced-up between the beams overhead; and also to allow the *two* mess-stools to lie *over* them in a *flat* position. By fitting to the legs of the stools *hinges* which will permit the former to fold flat, the stools may be readily placed over the traced-up tables. Upon the important occasion of clearing for action, the practical utility of the principle will always *tell*.

## PROGRESS OF EQUIPMENT.—SPECIFIC DUTIES.

IN apportioning specific duties for the day, much will depend on the time of the year, the numerical force afloat, and particularly the class of men already embarked. The weather should also be closely consulted; and in *winter*-time this officer will never find the progress of “fitting” retarded by too sedulously attending to this particular.

WET WEATHER.—A party of hands may be

profitably employed scraping such decks as afford to the "gang" so engaged shelter from the rain; whilst the holders may be advantageously occupied in completing the ship's stowage. And here it may be not unworthy of remark, that in "first" fitting, the ship cannot be too speedily completed with wood, water, and coals.

FINE WEATHER.—In fine weather, or during the summer season, and particularly when there is no lack of hands, the senior lieutenant should adopt every possible means to ensure an undeviating system in the execution of *divisional labour*; and he should not only be himself impressed with, but impress upon the minds of those delegated to superintend specific duties, the absolute necessity of not permitting a *clash* in the performance of the several services undertaken. If men busily occupied below are to be called upon deck by the beck of an inconsiderate officer, in order that he may complete his minor duties—or if, on the other hand, men engaged in fitting the rigging *aloft* are to be called *below* to assist the movements of the master in the hold,—matters can never go right afloat. It is the duty of the first-lieutenant to confine officers to the performance of their own relative duties.

For "Fitting Rigging," "Pointing Sails," "Stowing Booms," "Trying Spare Spars and Fitted Furniture," "Shipment of Stores," and "Lining and Painting Ship,"—Vide *Boatswain and Carpenter*—"First Commissioning."

For "Berthing Hammocks," "Numbering Hammocks and Bags," "Fitting Port-tackle-falls," "Blacking Clues and Lashings," "Fitting Messengers," and "Pointing, Becketing, and Stretching Hawsers,"—Vide *Lower and Main-deck Mates*.

#### GUNNER'S DUTIES ASHORE AND AFLOAT.\*

THE senior lieutenant will do well to bear in recollection, that in *first* fitting a vessel-of-war, it is always better to be in *advance* than in arrear with those duties connected with the *gunner's* department.—Vide duties assigned to *Gunner*.

#### BOATS IN THE BOAT-HOUSE.

THE first-lieutenant is recommended to give an occasional glance at the boats, pending the period they are in the hands of the builder, and particu-

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\* Vide GUNNER—"Inspection of Gun-geer before leaving the Hulk."

larly before they are consigned to the *painter*. The experienced officer will understand the value of this practical hint.—Vide *Carpenter*, same heading.

### BENDING SAILS.

FORE-AND-AFT SAILS.—In performing this service, it is always desirable to bend first the fore-and-aft sails; to hoist them up, see how they stand, and to notice particularly whether any improvement can be made in the manner of *leading* their several sheets. This precaution is necessary before the ship departs the port; it being often found that the sheave-holes,\* diagonally cut in the bulwarks for the insertion of the head-sheets, are placed in positions ill-suited to the standing of the sails. The jibs and stay-sails should be run up-and-down several times, in order that it may be made manifest that their respective halliards and downhauls be fairly led.

SQUARE-SAILS.—In bringing the square-sails to

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\* The precise position in which the diagonal sheave-holes should be cut for the head-sheets may be easily ascertained by leading the sheets in a line continuous with that which may be drawn from the centre of the luff to the extremity of the clue; or, in other words, that the direction of the sheet passes through the centre of gravity of the sail.

the yards, the top-sails should be always *bent* without landing them in the tops, and sent aloft by "long-tackles,"\* fitted for the purpose, at the same time that the courses are hauled out by their respective yard ropes. This method has, of late years, become prevalent in the service; though, indeed, (and with shame be it said,) ships at sea have been recently seen to shift a top-sail after the old John-Hamilton-Moore fashion of "taking up" the top-sail-tye, and sending up the sail abaft all. The custom of *riding down*† the heads of sails is one which no practical seaman will ever sanction.

When the top-sails and courses are bent, and their respective geer properly rove, the former should be sheeted home and hoisted to the mast-head with all their reefs out. The top-gallant sails and royals should be set at the same time, and the geer of the courses overhauled down. The sails should be clued up, and set three or four times, in order to ascertain that every rope be clearly *rove*,

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\* Vide *MATE-OF-THE-LOWER-DECK*—"Making-up Sails."

† The author of "The Naval Officer's Guide" recommends this method of "stretching the head of the sail." Why the roping of a sail is to be stretched in opposition to the stitching of the seams of the canvas, has puzzled sea-faring folk. The practice is very properly fading out of fashion.



and fairly *led* before they be finally furled. On the following day, it is recommended to bend the studding-sails, and, if the weather and wind permit, to hoist them up, and see how they severally stand.

#### SHIFTING FROM THE HULK TO THE SHIP.

THE duties incidental to this occasion are severally assigned to those officers whose superintendence become indispensable to ensure order and regularity. The senior lieutenant should bear in mind that he will be held responsible for the cleanly condition of the hulk, and that he will not cause a report to be forwarded to the superintendent of the dock-yard until the vessel be thoroughly cleaned and rendered fit for the reception of another crew.

#### WATCH-BILL, ON THE PRINCIPLE OF PARTNERS.

THE preliminary step in forming a watch-bill is, to make an exact estimate of the *actual* working hands in each watch. To ascertain this, it will be necessary to deduct the officers, idlers, boys, and marines from the full complement allowed to the ship. By reference to the formula, given by way of example,

at the close of this chapter, it will be seen that there are thirty-four officers, fifty marines, twenty-nine idlers, and fifteen boys, which, together, will give one hundred and twenty-eight. Subtract this number from the complement, three hundred, and one hundred and seventy-two blue jackets remain, as *bonâ fide* working hands, to watch. Should it be desirable to add any number of boys to the department of the mizen-top, the required number should be "*lent*" from the list of boys, but should not appear in the watch-bill.

At one glance of this scheme, the senior lieutenant will see the number of working men to watch.\*

In forming the watch-bill, it is recommended to pursue that principle which, in this work, comes under the designation of PARTNERS,—that is, every name and number *opposite* to each other in the watch-bill, is made answerable for the stations and duties of each. For example, No. 1, the captain of the forecastle of the starboard watch, is to be

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\* It may here be necessary to observe, that a quarter-master or a boatswain's mate may appear more than is allowed by the Admiralty complement, and that the rating of the captain's coxswain, and coxswain of the launch, may be given to the two petty officers who perform these duties.

made acquainted with *all* the stations and duties of No. 2, in the larboard watch, and so on throughout the watch-bill.

In granting leave on shore, or in despatching a party from the ship to execute any particular duty, *partners* should *never* be permitted to go *together*; and, if an equal number of men out of *each* watch be selected for the performance of any specific service, numbers *opposite* to each other in the watch-bill are not to be “pricked off.” By this arrangement, a partner is always kept on board to perform the public as well as the private duties of the *absent* man.

#### QUARTERING SHIP'S COMPANY.

IN quartering the ship's company, the senior lieutenant should be fully aware of the necessity of distributing the men on the different decks as nearly as possible in the vicinity of that part of the vessel in which they perform their *general* duties. The fore-castle and fore-top men should be quartered forward; the main, mizen-top men, and after-guard, abaft; and the *artificers* should be equally distributed in positions of the ship where the services of mechanics may probably be called into sudden requisition; such, for example, as

carpenters and armourers. One or two carpenters should be quartered in close contiguity with the pumps, and a shipwright stationed to the "gun and opposite," and nearest to the rudder-head, with tools and materials ready to meet accident or repair damage done to the tiller. Care should be taken, that both the quarter-master at the con, and the men stationed at the wheel,\* be sharp of sight and quick of hearing. The top-men stationed aloft are required to be steady and active men, and the riggers should be selected from the best seamen, and "leading men" of the ship.

In forming the quarter-bill, the senior lieutenant will be required to observe a due balance with respect to the *two* watches; that is, the crew of each gun and its opposite, are to consist of equal numbers of men from both watches. The first captain, and half the crew of each gun, designated by the odd numbers, are to belong to the starboard watch; and the second captain, and the remaining half of the complement are to pertain to the larboard watch.†

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\* Captain Griffiths recommends tall men at the wheel.

† When an odd number of men are stationed as the crew of a gun, such as nine, eleven, or thirteen, the odd man should be alternately of the larboard and starboard watch.

## STATIONING SHIP'S COMPANY.

UPON this subject a diversity of opinion appears to exist, and that, too, with some of the most intelligent and experienced officers in the service. To determine upon which side the balance of authority preponderates, would, at this moment, be a question of difficult solution. The supporters of this system are loud in favour of "*individual stationing*;" whilst opponents of the practice assert, that considerable mischief constantly ensues by officers confiding too implicitly in what they term "the *certainty* of men being *always* found at their respective posts;" and, that supporters of such system do not make sufficient allowance for *casualties*, or anticipate sudden accidents occurring when people are proceeding hastily to their assigned stations. Those who disregard "*individual stationing*," contend, that captains are more likely to look for the *certain* execution of a specific service to the officers superintending different duties, than to trust to the fore-mast man, who *may* be missing; and that the lieutenants and petty officers are, on all occasions, more on the *alert* when left to the exercise of their own judgment.

The latter reasoning carries weight; but it must be admitted, that if stationing the fore-mast men in the execution of evolutionary duties be founded on that principle which has been already designated the *principle of partners*, and the basis of the system of stationing is made to *depend* upon the watch on *deck*, accident will seldom or never occur.

By the principle of *partners*, the people should be so stationed in the execution of specific movements, that the men who are appointed to "stand by ropes" when working with the *watch*, should also be directed to run to the *same* station when the "*hands* are called" to perform the same service. For example — in "*going about*," the captain of the fore-castle of the watch upon deck attends the "fore-tack and head bow-lines." The captain of the fore-castle of the watch below proceeds to the same ropes, in order to satisfy himself that the man belonging to the watch on deck is already in his station. If he be *not* at his post, the man belonging to the watch below occupies his place; but should the captain of the fore-castle of the watch on *deck* be seen in his station, his partner will proceed to assist in other duties assigned to him in the station-bill; and every partner

should become responsible that the services assigned to *both* men be performed by *one* or the *other*.\*

#### STATIONING SHIP'S COMPANY IN THE EVENT OF FIRE.

UPON the sudden alarm of fire afloat, nothing will more effectually contribute to preserve silence, prevent confusion, and avert panic, than a judicious distribution of duties, which will call into simultaneous action the aid of every officer, seaman, marine, and boy borne on the books of the ship.

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\* By adopting the system of partners, the first-lieutenant will save himself a world of trouble. When men are absent from the ship, or "away in boats," the customary cry is, "Send John Millar's messmates up to take his hammock down." John Millar may have six or seven messmates, and each messmate, in endeavouring to evade the task, may say, "*I* took it down the last time,"—though the "*last time*" is never made to appear. But were partners not only to be made answerable for each other's hammocks, but also for every other routine of service connected with their several stations in the ship, and were this based upon the principle of each being answerable for the public and private duties of the other, things would always work well afloat. A man becomes sick, his partner not only attends to his hammock, but washes his clothes. Again, another solicits leave on shore, but permission is not granted until he reports on the quarter-deck his partner on board, ready to fulfil his duties during his absence. It will be seen, that by pursuing the system of partners, the hammocks of absent men are readily hung upon the lower deck. For example, Nos. 4 and 5 of the fore-castle are berthed next to each other in the same longer: how much easier is it then for 4 to hang up the hammock of 5, than for the messmate of 5, whose No. may be 122, to perform this task upon the *opposite side and different extremity* of the ship?

By such pre-ordained arrangement, *presence of mind* in all parties will be ensured. This, it cannot be disputed, is the most valuable attribute which men, on the sudden discovery of danger, can possibly possess. Fire on board ship is one of the most bewildering casualties to which human beings are subject; but to allay the terror consequent upon the *first* announcement of the calamity, nothing can be so effectual as a knowledge, not only that measures to meet the evil are already systematized, but that every man, having a specific duty to perform, is less at leisure to give way to apprehension.

The propriety of "beating to quarters" upon the sudden alarm of fire may be disputed; and certainly there are objections to the adoption of this prevalent practice. In the first place, the ship's company are often called to quarters to perform duties totally unconnected with that which the *sound* of the summons would convey. In the next, though a portion of the crew may be apprised of the cause which calls for a general muster of the men, yet, the *majority* of the ship's company may be quite unacquainted with the casualty which produces the general movement; and the very questions and



answers interchanged on this occasion create confusion and excite alarm. Again, admitting that the men assemble quietly at quarters, considerable delay ensues by the *double* operation of *first* mustering the people, and *then* dispatching detached parties to collect those implements necessary to extinguish the fire,—to say nothing of the immense advantage which *provisional* service ever possesses over *discretionary* duties.

If a specific duty be assigned to every individual borne on the books, the moment the alarm of the fire be given, (and the alarm should be conveyed, instanter, through the medium of a rapid and a peculiarly-marked movement of the bell,) every soul on board has then only to repair to his assigned station ; and those whose duty it is to provide appropriate implements, will procure them, and proceed forthwith to their respective posts, without awaiting the orders of officers.

The FIRE-BILL should be so formed, and each man so stationed, as to meet contingencies incidental to fire afloat, whether happening in harbour or occurring at sea. For example, a ship moored in a crowded anchorage may have to slip her cables, to avoid endangering others. Under such circumstances,

if the ship be secured by chain-cables, the armourer and his mates, under the direction of a commissioned officer, should provide tools to unshackle the cable or cables at the desired length. Again, if the ship be at sea, on the discovery of fire breaking out below, to extinguish it promptly, much will depend on the locality of the fire, the sail that is set, and whether the ship be close hauled or sailing large. But the first consideration should be to ascertain promptly the precise *position* of the fire; and this duty should be entrusted to the first-lieutenant, at the head of a party of petty officers and leading men, to be designated *Fire Searchers*.

A particular party, under the direction of the surgeon and his assistants, should proceed to the sick berth, to superintend the removal of patients who may be lame or confined to their hammocks; as also to be in readiness to destroy, if required, all inflammable fluids or medical stores susceptible of ignition.\*

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\* An experienced officer will assign to the marines duties incidental to the occasion. The practice of directing this portion of the ship's company to fall in under arms is not one which here can be advocated. It is a libel on the seamen of the service to suppose that the marines are the only people serving in a vessel of war who, in time of danger, can command themselves sufficiently to deter the timid and enforce order.

## FIFTH-RATE'S PLAN OF WATCH-BILL,

ON THE PRINCIPLE OF PARTNERS—COMPLEMENT 300 MEN.

UNDER the heads of "Watching the Ship's Company," and forming the "Watch Bill," notice has already been taken of this subject; but to explain the principle of *partners*, and to simplify the plan, the senior lieutenant will first proceed to note the number of Officers, Marines, Boys, and Idlers allowed to the ship\* after the following formula:—

OFFICERS.	BOYS.
1 Captain.	5 second class.
4 Lieutenants.	10 third class.
1 Master.	
1 Second Master.	15
1 Chaplain.	
1 Surgeon.	
1 Purser.	
1 Boatswain.	
1 Gunner.	
1 Carpenter.	
1 Cook.	
2 Master's Mates.	
8 Midshipmen.	
1 Assistant Surgeon.	
1 Captain's Clerk.	
1 Schoolmaster.	
4 Volunteers.	
3	
34	
MARINES.	IDLERS.
2 Lieutenants.	1 Master-at-arms.
2 Serjeants.	1 Armourer.
1 Corporal.	1 Caulker.
1 Drummer.	1 Ship's Corporal.
44 Privates.	2 Carpenter's Mates.
	1 Captain-of-the-hold.
	1 Armourer's Mate.
	8 Carpenter's Crew.
	1 Boatswain's Yeoman.
	1 Gunner's ditto.
	1 Carpenter's ditto.
	1 Cook's Mate.
	1 Purser's Steward.
	1 Gun-room Steward.
	1 Ward-room Cook.
	1 Captain's Steward.
	1 Captain's Cook.
	1 Ship's Cook.
	1 Loblolly Boy.
	1 Sail-maker.
	1 Purser's Steward's Assistant.
50	29

\* In selecting crews for the boats, attention is directed that no department of the ship be weakened by an *unequal* distribution of hands.—Vide *formula*.

The total number of the Officers, Marines, Boys, and Idlers, it will be seen, is 128;

From the complement.....	300
Subtract.....	172

Leaving..... 172 men to watch, as in the formula annexed.

N. B.—The names inserted in the following Table are intended to demonstrate the principle of partners. Francis Fish is the partner of Henry Hawse. Neither of these men belong to boats; but as William Waters belongs to the barge, his partner, Thomas Tack, cannot, in accordance with this system, be stationed to a boat. Should, however, it become necessary to relieve the *standing* boats'-crews, whether upon the occasion of *watering* the ship, or performing duties that will admit of no interruption or delay in time, the senior lieutenant has only to direct the *opposite* numbers to take the places of their partners. The first-lieutenant should always appoint in both watches an even proportion of hands, to be designated "extra men," and to be named to every boat in the ship, in the event of casualties or sickness. For example, suppose No. 31, belonging to the barge, becomes sick, he will appoint an "extra man" from another department of the vessel, in order that the labour on board may not fall too heavily on the fore-top men. He will therefore nominate 109 from the department of the after-guard, to become one of the "extra men" belonging to the barge. Again, suppose 46 of the first cutter happens to leave his boat, and is left behind when doing duty on shore, then 92, "extra men" of the mizen-top, takes the place of 46 till the straggler returns.

If, however, the complement of men allowed to the ship will not admit of providing a sufficient number of "extra men" for all the boats, without infringing upon the principle of partners, the senior lieutenant must be guided by circumstances, and fill up vacancies accordingly. The barge and launch may be both on the booms; and as the services of each are not likely to be called into requisition, a man from the launch may supply the place of the sick man belonging to the second cutter; or a man from the barge may occupy the temporary place of the missing straggler. Few ships, on the war establishment, are without sufficient hands to admit of the principle of apportioning "extra hands" to the boats.

**WATCH-BILL OF A FIFTH-RATE.  
FORECASTLE-MEN.**

FIRST PART.

Rating.	Quarters.	Boat.	Starboard.	No. No.	Larboard.	Rating.	Quarters.	Boat.
Cap. F. C.	Rig. F. C.	Launch	Francis Fish.	1	Henry Hawse.	Cap. F. C.	Rig. F. C.	Launch
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9				
				10				
				11				
12								
A. B.	1st Gun, FC	Pinnace	Thomas Tack.	SECOND PART.		A. B.	1st Gun, FC	Barge
				13	William Waters.			
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				
				22				
23								
24								
		2nd Cutter						
		Gig						Gig



## MAIN-TOP-MEN.

## FIRST PART.

Rating.	Quarters.	Boat.	Starboard.	No. No.	Larboard.	Rating.	Quarters.	Boat.
Cap. M.T.	M.T.		Richard Roarer.	51 52	Benjamin Bellow.	Cap. M.T.	Rig. Q. D.	
		Launch		53 54				Launch
		Barge		55 56				Barge
		Barge		57 58				Barge
				59 60				
				61 62				
				63 64				
SECOND PART.								
		Pinnace		65 66				Pinnace
		1st Cutter		67 68				
		2nd Cutter		69 70				2nd Cutter
				71 72				
				73 74				
				75 76				2nd Cutter
		Gig		77 78				
				79 80				Jolly

## FORE-TOP-MEN.

## FIRST PART.

Rating.	Quarters.	Boat.	Starboard.	No. No.	Larboard.	Rating.	Quarters.	Boat.
Cap. F.T.	F. T.		Thomas Earring.	25 26 27 28 29 30 31 32 33 34 35 36 37 38	Benjamin Bunter.	Cap. F. T.	I Gun, MD	Launch Barge Barge
SECOND PART.								
				39 40 41 42 43 44 45 46 47 48 49 50				Pinnacle 1st Cutter 2nd Cutter Gig



## MAIN-TOP-MEN.

## FIRST PART.

Rating.	Quarters.	Boat.	Starboard.	No.	No.	Larboard.	Rating.	Quarters.	Boat.
Cap. M.T.	M.T.	Launch	Richard Roarer.	51	52	Benjamin Bellow.	Cap. M.T.	Rig. Q. D.	Launch
		Barge		53	54				Barge
		Barge		55	56				Barge
				57	58				
				59	60				
				61	62				
				63	64				
SECOND PART.									
		Pinnace		65	66				Pinnace
		1st Cutter		67	68				2nd Cutter
		2nd Cutter		69	70				2nd Cutter
				71	72				
				73	74				
				75	76				
		Gig		77	78				Jolly
				79	80				

## MIZEN-TOP-MEN.

## FIRST PART.

Rating.	Quarters.	Boat.	No. No.	Rating.	Quarters.	Boat.		
A. B.	Miz. Top	Jolly	Charles Cistern.	A. B.	Rig. Qr. D.	Jolly		
			81				82	Peter Peak.
			83				84	
			85				86	
			87				88	
SECOND PART.								
A. B.	2nd Cutter	2nd Cutter	89	90	A. B.	1st Cutter		
			91	92			Extra man.	
			93	94				
AFTER-GUARD.								
FIRST PART.								
Cap. Af. Gd.	Rig. Qr. D.	Launch	Samuel Scraper.	A. B.	Gun, Q. D.	Launch		
			95				96	Henry Bucket.
			97				98	
			99				100	
			101				102	
		103	104			Launch		

Pinnace	105 106	Pinnace	105 106
1st Cutter	107 108	1st Cutter	107 108
Pinnace	109 110	Pinnace	109 110
Pinnace	111 112	Pinnace	111 112
Pinnace	113 114	Pinnace	113 114
Pinnace	115 116	Pinnace	115 116
Pinnace	117 118	Pinnace	117 118
Pinnace	119 120	Pinnace	119 120
<b>SECOND PART.</b>			
1st Cutter	121 122	1st Cutter	121 122
2nd Cutter	123 124	2nd Cutter	123 124
2nd Cutter	125 126	2nd Cutter	125 126
2nd Cutter	127 128	2nd Cutter	127 128
2nd Cutter	129 130	2nd Cutter	129 130
Jolly	131 132	Jolly	131 132
Jolly	133 134	Jolly	133 134
Jolly	135 136	Jolly	135 136
Jolly	137 138	Jolly	137 138
Jolly	139 140	Jolly	139 140
Jolly	141 142	Jolly	141 142

W A I S T E R S.  
FIRST PART.

Rating.	Quarters.	Boat.	No. No.	Rating.	Quarters.	Boat.
Cap. Mast	7 Gun, M.D.		143 144	Cap. Mast.	8 Gun, M.D.	
	Henry Hatch.		145 146			
	SECOND PART.					
		Launch	147 148			
		Jolly	149 150			Launch

G U N N E R S.  
FIRST PART.

Gunr. Mate	Magazine	Boat.	No. No.	Gunr. Mate	Rig. Qr. D.	Boat.
		Launch	151 152	Gunr. Mate	Rig. Qr. D.	1st Cutter
			153 154			Launch
			155 156			Pinnace
			SECOND PART.			
		1st Cutter	157 158			
			159 160			
			161 162			

## BOATSWAIN'S MATES.

## FIRST PART.

Rating.	Quarters.	Boat.	Starboard.	No. No.	Larboard.	Rating.	Quarters.	Boat.
Bsn. Mate	Cap. Rig. Qr. D.		Charles Call.	163 164	Peter Pipes.	Bsn. Mate	7 Gun, MD.	
Cox. Lench.	3 Gun, MD.		SECOND PART.			Cox. Pinn.	After Gun, Qr. D.	
				165 166				

## QUARTER-MASTERS.

## FIRST WATCH.

Qr. Mastr.	Con or Wheel	Cox. Barge	Thomas Tiller.	167 168	William Wheeler.	Qr. Mastr.	Wheel
Qr. Mastr.	Cap. 2nd Gun, Q.D.			SECOND WATCH. 169 170		Qr. Mastr.	4 Gun, Q.D. Cox. Pinn.
Qr. Mastr.	13th Gun, M. D.			THIRD WATCH. 171 172		Capt. Coxs.	Gig

**I D L E R S.**  
**FIRST PART.**

Rating.	Quarters.	Starboard.	No.	No.	Larboard.	Rating.	Quarters.
Master-at-arms	Magazine	Master-at-Arms .....	173	174	Ship's Corporal.....	Ship's Corp.	Fore Cockpit
Armourer	4th Gun, M. D.	Armourer .....	175	176	Armourer's Mate.....	Arm. Mate	Aft G., M. D.
Sail-maker	6th Gun, M. D.	Sail-maker .....	177	178	Caulker.....	Caulker	Wings
Carpent. Mate	Wings	Carpenter's Mate.....	179	180	Carpenter's Mate.....	Carp. Crew	8th Gun, M. D.
Carpent. Crew	Wings	Carpenter's Crew.....	181	182	Carpenter's Crew.....	Ditto	Wings
Ditto	7th Gun, M. D.	Ditto .....	183	184	Ditto .....	Ditto	Aft G., M. D.
SECOND PART.							
Carpent. Crew	2d Gun, M. D.	Carpenter's Crew .....	185	186	Carpenter's Crew.....	Carp. Crew	7th Gun, M. D.
Ditto	3d Gun, M. D.	Ditto .....	187	188	Ditto .....	Ditto	10 Gun, M. D.
Capt. Hold	Wings	Captain-of-the-Hold.....	189	190	Boatswain's Yeoman .....	Yes. Store r.	Fore Cockpit
Capt. Steward	Fore Cockpit	Gunner's Yeoman.....	191	192	Carpenter's Yeoman .....	Ditto	Ditto
Purs. Steward	Aft Gun, M. D.	Captain's Steward.....	193	194	Gun-room Steward.....	G. R. Steward	Aft Cockpit
Captain's Cook	Aft Cockpit	Purser's Steward .....	195	196	Purser's Steward's Asstt.	Ordinary	Ditto
Ship's Cook	2d Gun, M. D.	Captain's Cook .....	197	198	Ward-room Cook .....	W. R. Cook	3d Gun, M. D.
Ordinary	Magazine	Ship's Cook.....	199	200	Cook's Mate.....	Ordinary	Ditto
	Attendant Surg.	Lobolly Boy.....	201				

## B O Y S.

## FIRST PART.

Rating.	Quarters.	Starboard.	No. No.	Larboard.	Rating.	Quarters.
Second Class	Pow. B. aft M. D.		202	Simon Steady, 1 Lieut. B.	Boy, 2d Class	Pow. B., Q. D.
Ditto	Do. Forecastle	Boy, 2nd Lieutenant's, ...	203	Boy, 3rd Lieutenant's, ...	Ditto	Do. Fore M. D.
Ditto	Do. M. D.	Do. 4th Lieutenant's, ...	205	Do. Master's, ...	Ditto	Do. Q. Deck
		Do. Purser's, ...	207	Do. Surgeon's, ...	Ditto	Attend. Surg.
SECOND PART.						
Ditto	Do. M. D.	Boy, Chaplain's, ...	209	Boy, Gunner's, ...	Boy, 2d Class	F. Gun, M. D.
Ditto	Do. Forecastle	Do. Boatswain's, ...	211	Do. Carpenter's, ...	Ditto	Wings
Ditto	Do. aft G. M. D.	Do. Captain's, ...	213	Do. Lent to Miz.-top L. W.	Ditto	F. M. D.
Ditto	Do. do.	Do. Midshipmen's, ...	215	Do. Midshipmen's, ...	Ditto	Aft M. D.

## MARINES.

## FIRST PART.

Rating.	Quarters.	Centinals.	Starboard.	No. No.	Larboard.	Rating.	Quarters.	Centinals.
Serjeant	Quarter-deck		Serjeant	217	Serjeant	Serjeant	Forecastle	
Private	1st G. F. C.	Forecastle	Private	219	Private	Private	1st G. Q. D.	
	2d G. Q. D.			221			3d G. Q. D.	Cabin Door
	4th G. Q. D.	Cabin Door		223			5th G. Q. D.	
	6th G. Q. D.			225			1st G. F. C.	
	2d G. F. C.	Gangway		227			6th G. Q. D.	
	4th G. Q. D.			229			3d G. Q. D.	Gangway
	2d G. F. C.	Cabin Door		231				
		F. H. Mag.		233				
				235				
		Gun-room D.		237				
		Officers' Ser.		239				
				240				



## SECOND PART.\*

Corporal	Quarter-deck	Corporal	241	Lance Corporal			
Private		Private	243 244	Private			
	Gangway		245 246				Gangway
	Forecastle		247 248				F. Hat. Mag.
	Gun-room D.		249 250				Gun-room D.
			251 252				
	F. H. Mag.		253 254				
			255 256				
			257 258				
			259 260				Gangway
	F. H. Mag.		261 262				Officers' Str.
			263 264				

\* The column devoted to quarters is only partially filled up. A sufficient number to demonstrate the plan of quartering the marines is given: it being always desirable to distribute the party to the guns equally on the quarter-deck and forecastle. The column headed "Centinels" will show the number of *working* hands of which the watch is deprived. Those centinels, however, who are posted on the gangways and forecastle in harbour will, when at sea, do their duty as regular working hands in their respective watches. By the above plan it will be also seen that no *two centinels* appear as partners.

## IN PORT.

## FITTING.

IN opening this chapter, it may be necessary to observe that the port duties will as much depend upon the locality of the port as upon the state and condition of the ship, and the extent of repair and fitting the vessel may require. The prompt and orderly execution of duties will entirely depend upon the *pre-arrangements* of the commanding officer. He should studiously consult dock-yard hours, weather, *time*, and *tide*.

RUNNING IN AND OUT LOWER-DECK  
GUNS.

THE senior lieutenant is recommended to consult the surgeon upon the propriety of keeping the

ports open, and the guns out, during winter weather.

#### BOATS.—DUTIES OF CREWS.\*

NOTHING sooner indicates the order and discipline of a vessel-of-war than the cleanly condition and efficient state of the boats, together with the personal appearance of their crews. In this particular, sufficient attention is not always observed in the service. In well-regulated ships the coxswains are compelled to report to the senior lieutenant the state of their respective boats, and in the morning to ascertain, from the commanding officer, the manner he may require the people to be dressed for the day.

#### BOATS.—OFFICERS.

NOTHING more strongly indicates an unaccommodating disposition on the part of the senior lieutenant, than the unsightly appearance of three or four officers, seated in a shore-boat, shoving off from the side of a vessel-of-war. Of this *accommodating* spirit some lieutenants, singular to say, are parti-

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\* All boat-duties incidental to a ship in port will be found in a chapter addressed to the "Midshipman," to which the first-lieutenant is immediately referred.

cularly proud, and are often delighted at the opportunity it affords them to prove their power, or rather, to manifest their will. This is littleness indeed, and a petty exemplification of "brief authority." \*

#### LEAVE TO THE SHIP'S COMPANY.

WHEN it becomes an imperative duty on the part of the commanding officer to refuse leave to applicants, or, as it is termed by the fore-mast men, "*liberty on shore*," he should always endeavour to assign a satisfactory reason for non-compliance. It sometimes happens that officers refuse permission to the men in a manner which leaves the applicant to *suspect* that the refusal proceeds more from caprice,

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\* It is true that inconsiderate officers, and those who come under the denomination of "idlers," do not always make sufficient allowance for the varieties of duty which the senior lieutenant may be required to execute during the day, and that the period which may suit the "idler" to dissipate tedium may neither suit the convenience of the service, nor the *troublesome time* of the first-lieutenant. To prevent mistake, misunderstanding, imputations of caprice, or either party being disappointed of anticipated *pleasure*, it should be an invariable rule in all vessels-of-war, that a boat, at stated periods of the day, when the public service will admit of it, be placed at the disposal of officers, for the purpose of conveying them to and from the shore. Such regulations will save the first-lieutenant a world of trouble, and possibly *prevent* a war of words.

or individual dislike, than from any rational cause connected with impending duties.\* No men are more easily satisfied than seamen, particularly when the *reason* of an abridgement of their privileges is made manifest. It is true, that there are subjects in the service that must be treated with apparent harshness; but such characters, upon applying for leave to visit the shore or other vessels-of-war, should be distinctly told, in a tone devoid of all prejudice or passion, that the refusal is a penalty consequent upon "bad behaviour," and that as soon as amendment appears in the applicant's conduct, so soon will he meet with the same indulgence which is granted to others.

A remedy for "*leave-breaking*" has long been successfully tried, with beneficial effects, both to the seamen and to the service. It is simply this:—A man solicits leave on shore—the commanding

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\* Many officers, when fitting in port, are *particularly economical* in the dispensation of leave, and limit the "*liberty*" to a period which invariably causes a *liberty* to be taken with the *leave*; and adduce this as a reason for curtailing "of its fair proportions" that time of rest and recreation so ardently looked for on return from sea by the seamen of the service. It is an indisputable fact, that in fitting ships, even "with all possible despatch," those officers who have allowed to their crews the longest leave, have always had the satisfaction of finding their vessels the *first* equipped, and their complement soonest complete.

officer inquires the period he desires permission to be absent from the ship; the applicant answers, "Eighteen hours." "Perhaps you would like twenty-four," returns the lieutenant,—"if you promise to return to the ship at that period, your leave is granted; but for every hour you break *over* your limited time, you will pay the penalty of a week's confinement on board,—that is, if you return to the ship *six* hours after your leave has expired, you must not look for a renewal of leave for *six* weeks."

That this remedy\* should operate effectually, the senior lieutenant will be required to keep a "case book," after the formula given in the opposite page, and he must conform strictly to the conditions stipulated in the bond. When the fore-mast man perceives that the conditions are only broken on his part, and that the commanding officer rigidly "stands upon his bond," there will be few *liberties* taken with *leave*.

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\* Vide article under the head of "Preservation of Silence."

## FORMULA FOR "LIBERTY MEN."

Men's Names.	Number on the Ship's Books.	Department of Ship.	Extent of Leave.	Date Quitted.	Date Returned.	REMARKS.
John Sutton...	42	{ Fore-top Starb. Watch.	Twenty-four hours.	1st of May, 6 P. M.	{ 3d of May, 8 A. M.	Leave broken fourteen hours. Fourteen weeks before renewal of leave can be granted.
Richard Jones	4	{ Cap. Forec. Larb. Watch.	Twenty-four hours.	1st of May, 6 P. M.	2d of May, 6 P. M.	Returned at expiration of leave.

## WOMEN ALONGSIDE THE SHIP.

"FEW things," says a professional writer,\* "are more teasing to the men than to have their wives &c. plying off on their oars, as they are sometimes kept even for a considerable time,"—at periods, too, when the rain, together with the spray of the sea, has caused them much of personal inconvenience by wetting their habiliments. "Independently of the distress thus occasioned to them, these ladies should not, even on the score of policy, be unnecessarily annoyed; their *influence* over the men is well known,† and it does not appear to be judicious to

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\* Captain Griffiths.

† The author of this work has to record a curious colloquy which took place on board His Majesty's ship C——, in Plymouth Sound, during the early part of the year 1825.

A "lady" who had been kept "lying off on her oars" longer than was deemed consistent with Chesterfieldian notions of etiquette, thus broke out as soon as she ascended the vessel's side, and was fairly out of ear-shot of the first-lieutenant:—

"Curse the ship, and the fellor who do'sn't know how to treat a woman *like* a woman! It took me, ay, more nor five shillings—and no easy matter it was, too, to raise the same—to redeem it; look at it! (holding up the tail of her gown, dripping wet,) look at it!—it's not even fit now to convart into a common swab! *He* call himself a man!—no, there's never a bit o' man's blood in his unhuman carcass!"

"Never mind, Bet; give us the pattens, and bundle below to the berth."

"Bundle below, indeed! I tell you what 'tis, Mister Bill, you're never a bit *better* yourself. D'y' think as Tom Williams



stimulate an exertion of such influence. Although there are times when duty may render it improper to admit women at the moment, yet in general that is not the case; and if it be necessary to refuse them admission, it is better to tell them to come at a given hour, than to keep them hanging on. Waterage is a heavy expense to the parties, and it must be augmented by these delays of getting on board.”\*

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there 'oud stand it?—not he; he's too much of a man to see his wife moll-treated in any way. But *you*—ye hasn't the heart of a man!”

“Go below quietly, old girl,—bundle below. I say, Bet, where ha' ye got the bladder?—mum—mind the master-'t-arms.”

“Ay! that's all the likes as such fellors as you think on. Look at my gownd—look at my bonnet,—but y'er a chicken-hearted fellor, or you'd go aft and 'monstrate to the fellor's face. And, moreover, if you'd the smallest liking or regard for a woman, you'd take the first hoppersoon to bolt from the beggarly ship.”

“So I woo'd, Bet; but ye see I've a matter of *seven* years' *sarvitude* to look to.”

It is needless to add, that the lady's eloquence fled with her flight below.

\* These remarks are well founded. The author would find it no difficult matter to have them corroborated by living testimonies, collected from the vicinity of “*Castlerag*,” or the neighbourhood of “*Point*.” But, to prevent inconvenience to the “sex,” as well as to the service, commanding-officers who are disposed to be *accommodating*, or, as it is sometimes termed by the “ladies,” to be “*good-natured*,” establish certain days for the ingress and egress of the female community afloat. Tuesdays and Saturdays are generally devoted to this purpose; and some officers so far indulge in gallant feelings as to allow a ship's boat to land the “ladies.”

## A T S E A.

## ARTIFICERS.—RETURN OF DAILY WORK.

THE warrant officers have been already directed, not only to return to the senior lieutenant "Reports" of artificers' work performed during the twenty-four hours, but also to lay before him a plan of such operations as may be designed for the ensuing day.\*

It is a practice too prevalent in the service, to assign to the watch below the execution of duties

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\* This system will prevent much mistake. Nothing carries with it more of disorderly sound, than the voice of the first-lieutenant *roaring*, in a tone of interrogation, "What's *that* the carpenters are sawing up *now*?" or, "What are the sail-makers *at*? I never ordered *that* sail up for repair—bundle it below again." Noisy interrogations of this nature frequently assail the *ears* of the *captain* in the cabin.

which might be as readily performed by the people composing the watch upon deck. The custom of assigning duties to those who have had hardly time to recover from the harassing effects which have been produced by bodily labour upon deck, is manifestly founded in error. From such system, more of evil than of good is likely to result.\*

#### EXERCISING GREAT GUNS.

IT has long been the custom of the service to exercise a certain portion of the ship's company at quarters. This is a most proper and desirable system to pursue, so long as the men composing the division to be exercised, pertain not to the watch *below*. After the fatigue of the morning watch, and particularly the labour of cleaning the lower-deck, to be called away from their little leisure, to exercise the great guns, is to the fore-mast men a source of *annoyance*, of which few officers are altogether aware. By the proposed plan, the watch *below* are never disturbed, and all the deck-duties incidental to a ship at sea are executed by the watch

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\* When officers are in doubt as to the cause of desertions, the simple interrogation of "do you work the watch *below*?" may do much towards the solution of a matter often involved in mystery.

at quarters. This can be readily accomplished, particularly as the official instructions direct that "the crew of each gun and its opposite, are to consist of equal numbers of men from both watches."

Suppose, for example, the larboard watch be the watch upon deck, and that it be required to exercise *one part* of the main-deck quarters,—the senior lieutenant should not call the first part of the main-deck quarters, because that division is composed from the starboard watch, and the starboard watch is then the watch *below*. He will therefore direct the second part of the main-deck quarters to fall in on the larboard side of that deck; and the officer commanding the division to be exercised, will select the seven foremost or seven aftermost guns on the same side, so as to allow to each gun its full complement of men. If it be required to shorten sail, to haul the jib down, or the main-sail up, the sail-trimmers of the main-deck quarters, in addition to the remaining portion of the watch unoccupied at the guns, can be always called to execute such service. Whereas, by the usual method of exercise adopted in the service, disputes constantly arise between the officer-of-the-watch and the officer superintending the division at quarters. The officer

superintending the exercise at the guns complains, that the moment he commences a movement with his men, they are called away by the lieutenant in charge of the deck, to "brail up the driver," or "brace up the main-yard," and, during that time, the seamen-of-the-watch below growl and grumble, that they have to "work double tides" at the side-tackles, &c., pending the absence of those people who have been called away to trim sails or execute other evolutions.

A clear-sighted officer, not wedded to antiquated notions, and who can appreciate the value of system, will at once see the propriety of pursuing a practice which must give universal satisfaction afloat.

#### EVENING QUARTERS.

THIS service is too often regarded in the light of a mere matter of muster. The first-lieutenant should exact, from all officers who become accountable, that the gun-geer and implements under their charge respectively, be in *reality* ready for immediate use; and not merely to be *reported* as such. He will do well to refer to those articles addressed to the warrant-officers under the head of "Evening Inspections." On no account is he to overlook

the necessity of having the winches of the chain-pumps "rigged" at evening quarters; nor should he ever forget to enforce the instructions which are given to the gunner, on the subject of the *life-buoy's* readiness for service.

#### MUSTERING THE WATCH.

VIDE article addressed to *Mate-of-the-Watch* under this head.

#### CLEARING FOR ACTION.

IF there be an occasion more than another, when forethought is indispensable in the executive officer, it is that of "clearing for action." The first-lieutenant should not only be acquainted with all the duties severally assigned to the heads of the different departments, but should also see that each service be carried into execution with promptitude and becoming coolness. A ship-of-war may be surprised by enemy at night; under such circumstances it will behove the senior lieutenant to adopt those measures best calculated to prevent confusion and preserve order.

A frigate,\* compared with a line-of-battle ship,

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\* The lieutenant who performs the duty of executive officer of a frigate, and who has only served in that class of ship, will

can suffer little by sudden surprise,—the hammocks on the lower-deck, however desirable to be stowed in their proper place in the nettings will not prevent the working of the *main* battery. Not so in a ship-of-the-line. A line-of-battle ship dare not go into action until the lower-deck be thoroughly cleared of the hammocks, and that the guns fore and aft be totally disencumbered of the tables, stools, and mess-utensils of the men.

A frigate should be perfectly prepared in five or six minutes at most. A ship-of-the-line, with all appliances and means to facilitate this service, cannot possibly be ready for action in a less interval of time than a quarter of an hour. If that period be the shortest in which the smartest ship can clear her decks, prepare her artillery, and open the magazines, what mischief may not ensue to a vessel that will take double that time, even to be partially prepared. In ships-of-the-line, this service ought to be more frequently made a matter of exercise; and in a manner which will not only promote rapidity in clearing the guns, but which will readily remove

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find himself much at a loss, when first called upon, in a two or three deck ship, to clear for action.

to their assigned places all furniture and other articles which encumber the quarters.\*

ACCIDENTAL OCCURRENCES.—TEMPORARY EXPEDIENTS.

THE classification of this work requires that all articles relating to accidental occurrences, or temporary expedients, be placed in juxtaposition in those chapters dedicated to the heads of the different departments, whose services upon the occasion of disaster are the first to be called into action. For this reason the first-lieutenant is referred to those chapters entitled "*Practical Hints*," dedicated to the warrant-officers.

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\* Vide article under the head of "Ship's Company's Tables and Stools."



## CAPTAIN.

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### PRELIMINARY REMARKS.

IN addressing officers of this grade, on a subject of such delicacy as that of the discipline indispensable on board a ship-of-war, it might have been expedient to anticipate the possible imputation of presumption on the part of the writer. Counsel loses much of its offensive quality, when it is discovered to be the slow growth of years or patient application. So far the writer feels he has a just claim to indulgence, since he can assure the profession, with the strictest truth, that the remarks which appear throughout this work are founded on long experience in the service, and are the result of unremitting attention to the necessity of observing *system*, and the peculiar disposition and marked characteristics of British seamen.

It cannot be disputed that firmness of character and conduct forms the chief requisite for the preservation of a high state of discipline on board a vessel-of-war. Nothing can supply its place; but it should be tempered by moderation, and regulated by discretion. The next in order, and almost equal in value, is self-possession; under which, in the comprehensiveness of the term, may be presumed to be included that inestimable quality, *temper*; without this, it is in vain to expect either dignified deportment or consistency of conduct in a commander, or respect for his character in the seamen.

## GENERAL DIRECTIONS.

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It would be a work of supererogation to enter into a minute detail of the multifarious duties incidental to the station of an officer commanding a vessel-of-war,—suffice it to say, the captain is the director of every movement, the supervisor of every service, and the party responsible\* for the prompt performance of *all* duties undertaken.

### SUCCEEDING TO THE COMMAND OF A SHIP.

It has long been the practice of the service, for a captain, in succeeding to the command of a ship,

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\* “Those who have observed the progress of discipline in vessels-of-war,” remarks an admiral, celebrated for his just notions of naval discipline, “cannot fail to know that almost every miscarriage, proceeding from the neglect of the officers and company, may be traced to the captain, if he has commanded the ship any length of time.”

to adopt some public manner of acquainting the crew of the means by which he proposes to regulate his own conduct, and to enforce obedience in that of others. This is sometimes effected through the medium of an address, publicly delivered to the people assembled on the quarter-deck. The propriety of this practice becomes questionable ; measures intended for general announcement, require deliberate consideration. Promises may be made, which may materially tend to confine the captain's future conduct in the management of men placed under his command, and with respect to whose individual behaviour it is impossible to perceive what may arise. Seamen are always averse to *speeches*, and particularly to those that contain pledges. There can be no occasion to advert to pledges, whether relating to rewards, or touching punishments. Neither is the system of the captain turning over to his successor the characters,\* *individually*, of the ship's company, at all to be desired. If, in mustering the

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\* Experience proves it to be more satisfactory to a ship's company, for a captain, in his address, to tell the men openly, that all are *strangers* alike to him ;—and he, perhaps, is equally a stranger to them ;—and that, as acquaintances are soon made afloat, his predecessor consents to dispense with the usual form of individual introduction.

crew over, some hands are particularly pointed out as “*good men*,” whilst others are passed over in silence, those who come under what may be termed *mute* notice, retire with feelings of dissatisfaction, and the former frequently presume upon their “reported” propriety of conduct.

#### OBEDIENCE OF ORDERS.

To ensure the complete obedience of orders of all officers, however subordinate in station, the strictest injunctions should be given that commands are never to be issued by any party who is not determined to have them carried into execution. Such monition will prevent much of vacillating conduct on the part of thoughtless and inconsiderate officers of an inferior grade; and superiors, who suffer neglect or disobedience of orders, after being *once* issued, should be subject to the severest official censure.\*

#### STANDING ORDERS.

IN concocting a code of “*standing orders*,” the captain is recommended to weigh well the tenor

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\* All officers should be given to understand, that it is not the *purport* of their commands that is to be considered, for with this subordinates have nothing to do; but, as prompt obedience is the very essence of efficient discipline, it behoves the commanding-officer to secure its strict observance.

and extent of each, and to be careful that no direction *clashes* with another, or that any be liable to become a subject of ulterior dispute. A want of due consideration upon this subject has frequently lead to contradictory orders, confusion, and consequences subversive of discipline. For these reasons it is advisable to issue as few\* "*standing orders*" as possible, and that each be simply expressed, so as to admit of *no* misconstruction nor mistake.

#### MOTIVES OF ACTION.

"It is not sufficient," observes a flag-officer, distinguished for his enlarged and enlightened views of the service, "for a man who is vested with command, as it may be for a private person, to be himself satisfied that his actions are right. A captain's reasons for acting should generally be made known and explained in public, that it may appear clearly he is actuated by no other motives than the prosecution of the service he is employed upon, and the welfare of the people he commands."

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\* Some officers, emulous of certain senators, appear to consider a multiplicity of orders, like the statutes of Great Britain, never to be sufficiently augmented—forgetting, that on all occasions in which orders are multiplied, contradictions invariably creep in and stand up in judgment against the framer of his own laws.

Promulgation of purpose, or explanation of motive, are by some officers held to be inconsistent with the dignity due to command; inasmuch as they imagine the means adopted amount to little short of a desire to court popular favour at a servile price. The case\* given underneath may serve to demonstrate the fallacy of such reasoning.

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\* Two captains, A. and B., are appointed to succeed two officers in command of two frigates, the *Arethusa* and *Bellona*. A. is appointed to the *Arethusa*, and B. to the *Bellona*. A.'s commission has been hardly read—scarcely has he taken from his predecessor the command of the ship, before he “*directs*” several important alterations to be made in her internal arrangements, as well as in the fitting of the standing rigging, and the reeving and leading of the running ropes.

Admitting, for practical purposes, that A.'s plans are better than those which his predecessor had adopted, yet, as A. does not condescend to explain them, or to make them manifest to those who have to carry them into effect, and who are by no means incompetent judges of their worth, opinions never will prevail in his favour. The tide of prejudice will always set strongly against him; his plans are only looked upon in the light of “*new brooms,*” and his *will* and *ways* are set down as the littleness and caprice of a person impatient to prove his *power*.

B., of the *Bellona*, desires to effect similar alterations to those which A. has decreed to be *immediately* commenced on board of the *Arethusa*. But B. proceeds to work in a manner which cannot offend the feelings of any, but which, on the contrary, is well calculated to remove former prejudices, should such exist, as well as to win opinions in favour of his proposed plans. Upon overhauling the rigging, and following with the eye of a seaman the reeving and leading of the running ropes, B. may say to the first-lieutenant, master, and boatswain assembled—“The bunt-lines of the courses, I perceive, are rove the old-fashioned way, and lean

## SACRIFICE OF PERSONAL COMFORTS.

NOTHING will sooner manifest a determination to be just, and to inspire a crew with confidence and respect for the captain's method of administering his public duties, than his evincing little anxiety in regard of his personal convenience. It has been well said, by a shrewd observer, now no more, "that no person's ease should be *sacrificed* to the captain's convenience."\*

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forward. Do not they often become twisted, or cable-laid? The top-sail clue-lines too, I see, are not fitted 'whip-fashion;' and you hoist the top-sails by means of jeers, instead of tyes. Well, I don't know, but I think better means might be devised to reeve and lead the running ropes; but, at all events, trial shall decide the matter. Reeve and lead every rope on the main-mast after the proposed plan, and let every thing on the fore-mast remain as already rove." When prepared to put the two methods to trial, the hands are turned up—B. walks round the decks, with the officers, to see there be fair play on both sides, and that the men about to execute the service after one manner have equal room, and the same chances, as those employed to perform the same evolution through the medium of the other. If the sails be clued up, or the top-sails be hoisted two or three times, and if, after changing and interchanging the stations of the men, one method has manifestly an advantage over the other, the better method will, of course, be adopted or retained by B. If the plan of B. succeeds in a manner which will admit of no doubt or cavilling as to cause, he not only attains the object of convincing all the officers and fore-mast men of the utility of his project, but also establishes himself as a quick-sighted and discerning seaman; and, what is still of equal importance, as a man who possesses common sense, and who is desirous to obtain the good opinion of those by whom he is surrounded.

\* It is a singular fact, that the disposition to display domestic



“ The captain should limit the number of menial servants as much as possible, even in the largest ships. In proportion as domestics are increased, in the same degree the probability of insolence is augmented. To men, conscious of their own value, nothing is so disgusting as arrogance, founded only on the favour of a chief; and nowhere are menial offices more contemptible than among seamen.” \*

#### PRESERVATION OF SILENCE.

To touch upon a subject of such vital importance as that of SILENCE on board a vessel-of-war, may

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magnificence and pompous parade invariably increases in a ratio proportionate to the capacity and inconvenience of the vessel. The first thing that the young commander did, when he took command of a ten-gun brig, was to “work a traverse” on the master, and to “weather him out of his cabin,” in order that this officer’s domicile might be converted into a berth for the captain’s steward. Such “shifts” produced remonstrances, which eventually caused the master to “hold his own,” and to eject the tenant of the pantry, crockery, plate, and all.

What looks more absurd, than to see a sentinel, some six feet in stature, planted at the cabin-door of a ten-gun brig? particularly when the height between decks is so *low*, that the soldier is compelled to forget all the painfully-acquired lessons of the drill-serjeant, and, with “heads up” ringing in his ears, to double his body like a boot-jack, in order to attain a *serviceable* position at his post.

\* These are valuable hints, of which, when the period of command arrives, young officers will do well to avail themselves.

possibly appear as misplaced in this chapter. But in addition to the observations which are severally addressed to officers, deprecating NOISE afloat, it may not be amiss to remark that the voice of the captain should be heard as *seldom* as possible, and only upon extraordinary and important occasions. If the hail of the captain be heard, intermixed with mandates of minor import, his voice will not so powerfully prevail, or be so promptly obeyed, at times when every tone should *tell*.

#### PUNISHMENT.

IN every case of a man's being brought up for punishment, the slightest indication of passion should be avoided, and the offender thus impressed with the wholesome conviction that the infliction is the necessary consequence of crime, abstracted from all private animosity or prejudice. The moment the painful duty is ended, no inclination should be shewn to keep the *recollection* of it alive by any ill-timed comment, or intimation that, in addition to his punishment, the delinquent is set down in the captain's *private* list. The tendency of such intimation is to make men reckless of the future, and regardless of character, which they, with a good

deal of reason, imagine is irrecoverably lost the moment their name is enrolled, in writing, in that hated record, denominated by men-of-war's men, the captain's "*black book*."\*

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\* Men-of-war's men imagine, that when once recorded in the captain's black-book, they are cut off from the slightest possibility of retrieving their character. A captain in the navy, who prided himself in his knowledge of the seamen of the service, never permitted a man to "leave the gangway" without addressing to the party punished, a few consolatory words in the following strain:— "Roberts, remember, we now start fairly *afresh*. No one is to *remind* you of your having been brought here. It will be your own fault if the recollection of this day is ever revived. Pipe to dinner."

## FIRST COMMISSIONING.

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WHEN the captain is appointed to a ship, he will do well to join her with all possible speed. Indeed, it were better that the very service of *hoisting the pendant* should be performed by the hands of the captain, than that he should be absent\* from the

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\* Officers should bear in mind, that when seeking for a first-lieutenant, or "hunting after a good master," the vessel may be commissioned by a *junior* lieutenant, and that this "juvenile" may adopt measures, and pursue systems, calculated to stamp prejudices very difficult to remove upon the occasion of raising men for the ship. Unless the captain be on the spot to set his own system at work, and unless such system be founded upon unerring rules and principles, which are not to be disturbed or shaken by the vacillating views of an inferior mind, His Majesty's ship will acquire a "*bad name*," and will probably remain "man-bound" in port at a pressing period, when the vessel should be ready to proceed to sea. It must be manifest to every commander, that early personal application from a captain will do more on the first fitting of a ship, than a thousand letters or deferred intreaties. Such applications are invariably answered, "too far advanced in the ship's progress,—the application has been made too late."

ship an hour longer than it is necessary to arrange his private affairs.

#### FITTING INTERIOR OF THE SHIP.

To prevent the recapitulation of suggestions and considerations connected with this subject, the captain is recommended to consult those chapters dedicated to the different officers, which expressly treat upon the interior fitting of the ship. But if his attention is to be directed particularly to any subject relating to work performed by the dock-yard artificers, it is that which touches upon the subject of the ship's company's stools and tables. In a line-of-battle ship, the manner of fitting these articles becomes a primary consideration with every captain who values the importance of clearing speedily for action.—Vide article addressed to the *Senior Lieutenant*, under the head of “Stools and Tables of the Men.”

For “Stowing Ballast and Booms,” vide *Master* and *Boatswain*—“Inspection of Gun-geer before leaving the Hulk,” vide *Gunner*—For “Bending Sail”—“Formula of Watch Bill, upon the Principle of Partners”—and “Stationing Ship's Company,” vide *First Lieutenant*.

IN PORT.  

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It is a popular fallacy, that the captain in port has little else to do than to indulge in recreation ashore. In the event of a sudden gale depriving the captain of the opportunity of returning from the shore to the ship, no man upon the books of that ship enjoys so little of mental repose as the *absent* commander.

It is also a "vulgar error" to imagine that all the duties incidental to a ship fitting in port, do not immediately emanate from the mind which not only sets the engine at work, but which becomes responsible for the efficiency and state of the general machinery. Who has to answer to the admiral, or Admiralty, for any apparent delay in the ship's equipment? By whom are official applications made? important interrogations answered? public

letters concocted ? and productions, almost amounting to *petitions*, framed for the benefit of the fore-mast men ?

But it will not be disputed, that an efficient discharge of his official duties, will, as in the case of every other officer, materially depend upon activity of mind, and general intelligence. Neglect, or even unpremeditated inattention, on the part of the captain, not only tends to retard the execution of contemplated duties, but may also be the means of producing delays detrimental to the public service.\*

#### LEAVE TO THE SHIP'S COMPANY.

IN addition to those observations which are to be found in another chapter, † on the subject of leave to the fore-mast men, a few words are here offered for the consideration of the captain. Restriction of leave is often considered by seamen in the light of tyrannical caprice, and this too when tyranny or

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\* For example,—the captain omits to sign a "demand" for stores, or other official document of moment. By such omission an essential service is left unexecuted, and duties of paramount importance are possibly deferred, in consequence of an innocent omission, which has been solely produced by a treacherous memory. To be an efficient officer, and one competent to command a vessel-of-war, the thoughts of the captain must never be unoccupied.

† Vide "FIRST LIEUTENANT."

caprice are the last thoughts that enter the head of their commander—his only object being to keep the ship manned, and not to proceed to sea short-handed. But such restrictions are little calculated to effect the desired end. Desertion always ensues in those ships in which there appears to be an *unaccountable* limitation of leave. It also may be set down as the chief cause of aversion which seamen sometimes entertain for the naval service. It has been well said, “that hardships and privations will be alleviated by relaxation, but of which this system of confinement eradicates even the most distant hopes.”

It would seem to be but a justice which the captain owes to himself, to remove from the minds of the fore-mast men, any unfavourable impression which refusal of leave may engender; and when the service to be executed will *not* admit of weakening the complement of “*working* hands,” pains should be taken to make manifest the *reason*\* why such indulgence cannot be granted. Were officers

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\* Subjoined is the conclusion of a parting admonition of an old admiral to a young commander:—“If seamen are informed with candour, seamen will be sensible of the obligations which bind their captain; and they never will expect that he is to sacrifice his duty to their indulgence.”



disposed less to conceal than to promulgate their motives, they would not only satisfy feelings afloat, but satisfy equally the ends of justice.

#### SURVEYING INVALIDS.

THIS is a duty which requires more of consideration than is generally given to the subject. Captains are constantly required to assemble at the hospital, and, in conjunction with the surgeons of their respective ships, to survey such "subjects" as are reported to be "unfit for service." Captains generally leave the decision of the case to the medical men, and so far as professional knowledge is to decide upon the physical capabilities, or rather infirmities, of subjects for survey, the medical officers are the most competent judges to establish the fact. But, in the "Report of Survey," to which the surveying officers have each respectively to affix their signatures, there are certain particulars to record, and "remarks" to make, which can only be effected through the medium of interrogations put to the men by the captains sitting on the survey. And it is here that care should be taken that no question be put to a suffering seaman, worn out in His Majesty's service, which may offend his feelings or

cause him to entertain an opinion unfavourable of the sympathy of his superiors for his forlorn and feeble situation. If from physical infirmities men are to be discharged "invalided from the service," a kind and friendly admonition, a favourable word at parting, will never disserve the state. Whereas the reverse will inevitably tend to give tenacity to prejudices already too firmly rooted.\*

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\* On these occasions, however *sotto voce* the tone of the speaker, or the "subject" applicable to the remark, such epithets as, "the King's hard bargain," and other similar expressions incidental to cases of "over-haul," were better omitted—they subsequently undergo another "*over-haul*," in places little calculated to inculcate feelings favourable to His Majesty's service.

## A T S E A.

## NIGHT ORDER BOOK.

It is of the utmost importance that all orders relating to change of course, or alteration in the position of the ship's head,\* be distinctly worded, and *legibly* written. From inattention to the last-mentioned particular, disasters have sometimes ensued.

## NIGHT PRIVATE SIGNALS.

THE long duration of the present peace has caused many officers to forget that night private signals are still in existence; or that captains may very unexpectedly be called upon to answer such secret

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\* Vide article addressed to the "OFFICER OF THE WATCH," under the head of "Taken aback in the Order of Sailing."

symbols, which are purposely intended to distinguish His Majesty's vessels-of-war from those of other nations. After the captain has written his night orders, he is recommended to "look out," and note in writing the "night private signal"\* corresponding to the day and number of the month.

#### ATTACHED TO A FLEET.

WHEN attached to a fleet, the captain's first care should be, the adoption of means best calculated to ensure the certainty of preserving the station of the ship in the "order of sailing."—Vide *Officer-of-the-Watch*.

#### COMMUNICATING BY SIGNAL.

IN communicating by signal, it has become too prevalent a practice in His Majesty's service, to give to the "TELEGRAPH BOOK" the preference over the "GENERAL CODE." The impropriety of this

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\* The signal which a stranger may shew, as well as that the answer requires. By this precaution, the captain will not, if suddenly aroused from sleep, be either confused, or lose time in seeking the signal required. Care must be observed as to the exact *time* in taking out the number, or rather symbolic combination, of the lights required in reply—A. M. and P. M. may make the greatest difference.

practice must be apparent to every commander who can appreciate the value of brevity and *time*, and particularly on occasions when a tardy delivery of commands, or even a few minutes' delay in the conveyance of intelligence, may be attended with the most serious results,\* if not with irretrievable loss to the public service. The "telegraphic code" should never be employed,† except when it is found that the "general signals" are inadequate to convey the required "purport." It is true that the "general signals," issued for the use of His Majesty's ships are by many considered an imperfect and complicated code. But the system, indeed, must be sadly defective, if the movements and manœuvres of a fleet cannot all be directed through the medium of the "general signals."

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\* It may not be generally known, that in the late revolutionary war, an enemy's vessel escaped the vigilance of a British cruizer, in consequence of the commander of a sloop-of-war adopting the tardy medium of the telegraphic code to communicate that the fugitive had quitted port with troops on board, and had been seen steering the point indicated per compass signal. The repeated mistakes made in communicating this intelligence, was said to have been the cause of the mortifying fact.

† The telegraphic code should be resorted to as seldom as possible. One number is sooner answered than fifty. Brevity is as much the soul of business as of wit ; consequently, the sooner an order is conveyed, the sooner it can be carried into effect.

Under the head of "Telegraphic Signals," addressed to the "SIGNAL MESSIPHERS," the captain may permit a few passing remarks touching the *similarity* of sound in certain letters of the alphabet.

#### CHASING.

THIS subject involves a variety of "conditions," and admits of too many hypothetical cases to be discussed in a work of this nature. A few observations, however, touching the most approved principles for general purposes, may not be deemed as misplaced in this portion of the work.

Upon the discovery of a strange sail, standing directly towards the ship, the cruizer, then being under low sail, should exhibit nothing of lofty canvas, until it becomes apparent that the stranger has discovered the cruizer. Should the cruizer have her broadside presented to the stranger, and the latter be bearing down directly upon the former, it will be advisable to put the ship's head the other way, in order that the *distance* between the masts be not made discernable to the ship to windward. Should the stranger appear to be *suspicious*, and haul her wind to avoid closing with the cruizer, the mode of pursuit should be then regu-

lated by one undeviating rule, viz., to keep the chase always upon the nearest point of proximity; and upon no account to follow the fallacious, common-place practice of "tacking as soon as the chase is brought to bear *abaft* the beam."

*Theoretical* tacticians differ as to the relative point of bearing, at which invariably it is most advantageous for the chaser to *tack* when plying to windward in pursuit of a fugitive vessel. But confidence should never be placed in speculations touching the chances of a change of wind. If the chaser keep the chased as nearly as possible in the *stream* of the wind, he will not, in the event of any alteration occurring in point of position, be much in error. Whereas, a *speculative* course may be the means of throwing him considerably out, and increasing the distance between the two vessels, if the wind do not shift to the point desired by the chaser.\*

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\* It has been recommended, by one or two authorities who have treated upon the subject, for the chaser to heave about as soon as the vessel pursued becomes on the beam of the former, or, as tacticians term it, in that position which brings the chase to bear in a line perpendicular to the chaser's course. This manner of manœuvring necessarily involves a constant succession of tacks upon the same point of bearing. But, if the ship be "well-worked," the yards smartly hauled, and the sails quickly trimmed, the advantage of repeatedly tacking in smooth water will always tell in favour of the chaser, and the distance apart between the

**CHASING.—GOING LARGE.**—In chasing, when sailing large, and not directly astern of the vessel pursued, the primary object of the pursuer should be to ascertain that course which will keep the fugitive upon one fixed point of the compass, and which must be the shortest line upon which the vessel chased can be closed.

The quantity of sail to be carried upon this occasion not only requires the exercise of a nice nautical judgment, but also a public manifestation of duty,\* which will at once set suspicion at defiance, and silence idle and malicious remark.

#### SUDDEN DISCOVERY OF DANGER.

VARIOUS are the causes, here, (unnecessary to enumerate,) which may be unforeseen by seamen, and

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two vessels (if the chaser be the fastest sailer) will diminish, and not increase—a result of frequent occurrence—when the chaser adopts the contrary system of pursuit.

\* If, when chasing an enemy in the presence of a senior officer, the ship becomes so pressed with sail as evidently to diminish the velocity of the vessel, and to increase the chance of accidents to the masts of the ship, it is the bounden duty of the captain to intimate to his superior, by signal, the counter effect produced by such pressure, and the mischief likely to ensue to the “complaining spars.” Few commanders have ever erred by carrying too little canvas when in pursuit of a flying foe; but many, from mistaken motives, and from a desire to exhibit proofs of zeal and intrepidity, have not only lost the spars of the ship under their immediate command, but also have experienced the mortification



which may be the means of bringing a ship into sudden and unexpected peril. The more sudden the danger, the more difficult the task to allay alarm, and to avert the fatal effects consequent upon panic depriving the people of their self-possession. Upon an occasion of this kind, "the captain," as has been well observed, "has a conspicuous and important part to act. Upon him all eyes are turned; according to his looks and actions, hopes or fears predominate." Whatever be the case, however hopeless the prospect to ensure the safety of the ship, or preserve the lives of the crew, the commander is first called upon to *command* himself—to issue his orders in a cool and collected tone, and to exhibit in his personal deportment a firm and undaunted bearing. Such manifestations of demeanour and conduct will at once inspire a general feeling of confidence in the superior resources emanating from the *superior* mind—diminish the apprehensions of the timid, and encourage the exertions of the brave.\*

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of losing the object of their all-anxious pursuit. In support of these observations, several cases might be cited.

\* A flag-officer thus forcibly expresses himself.—"In such situations, true courage finds a proper sphere of action; no fame, no glory, attends on fatal shipwreck; but, in that distracting case, the noble mind stands self-supported, cool, and intrepid, even in the jaws of death."

## CLEARING FOR ACTION.

WHEN the subordinate officers perform promptly those duties respectively assigned to them preparatory to action, the mind of the captain will not be diverted from maturing his mode of attack, or his manner of meeting the enemy's assault. But no commander should *conceal* from the officers and crew his plan of attack. The commissioned officers, and particularly the master, should be made acquainted with the intention of their superior. And if ever it be permitted on the quarter-deck of a vessel-of-war to interchange undiagnosed opinions, it is upon the occasion of going into action. The captain should not be satisfied that his plans are rendered intelligible to all parties, until each, individually, is made to manifest his perfect comprehension.

## COMPOSITION OF PUBLIC LETTERS.

IN public letters, none but the most important particulars should be given, and such should be stated as concisely as possible. Studied language and pompous diction should be always avoided, especially in detailing insignificant services.

## DIPLOMATIC CORRESPONDENCE.

As captains are often placed in situations which require no little exercise of *diplomacy*, it would be

well that they should study the elements of this branch of political science. In carrying on negotiations by written documents, captains cannot be too wary. The words "*Litera scripta manet*" should always be present in their minds. An unguarded admission or inconsiderate expression may give the opposite party an advantage which may lead to injurious consequences. In order, therefore, to keep clear of the possibility of *compromising* their government, it would be safest to deal, as far as possible, in generalities, so as to give no vantage ground to opponents.

The following extracts of letters from Lords Nelson and Collingwood, will in some degree illustrate what is here said, and will, moreover, give the reader a curious specimen of the minds of those great men. The interest is the stronger, from the circumstance that both letters relate to one and the same subject.

*From LORD NELSON to LORD STRANGFORD,  
at Lisbon.\**

"I shall state my complaint of the circumstances which generally happen at Lagos. A ship-of-war goes

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\* This letter was written on board the "Victory," October 3, 1805.

there for water and refreshments, which, by treaty, she has a right to: from her communication she seems placed under the direction of the consul of one of our enemies, and very improper language is held by our enemies to the British officers and seamen, and inducements held out to them to desert. The enemy's consul then directs that only so many cabbages, or bullocks, or sheep, shall go on board, and, at his will and pleasure, so much water; and it has been carried so far, that a captain, whose ship was complete with water, giving his proper water to wash the linen, on sending ashore for more, was threatened by the Portuguese sentry, to be fired upon, if they presumed to attempt to take a drop. To this degradation no nation can submit.

“Now, what I demand is, that our officers and men, whilst in the neutral port, shall be under the protection of the neutral flag, and not be permitted to be insulted by the interference, either secret or open, of our enemies; and that every ship which goes into Lagos, or other ports, shall have such refreshments as are reasonable. And as to water, I never before heard that any limited quantity was allowed, much less that if a dirty shirt was washed, any French or Spanish consul should be allowed to say, ‘You English shall either wear a dirty shirt, or go without water to drink,’ and that a sentinel of a neutral power should presume to threaten to fire, if an ally presumed to take water.

“I shall send a ship or ships to take in water at Lagos. They shall wash, or let it run overboard, if they please; and I rely that the Portuguese government will direct that our enemies shall not insult our people, much less dictate to the Portuguese governor for his treatment of us. However degraded the Portuguese

may allow themselves to become, it is hardly fair that they should expect us to be insulted by our enemies on their neutral ground: for if, by words or any other mode of warfare, they do permit it, I shall certainly retaliate."

*From LORD COLLINGWOOD to LORD ROBERT  
FITZGERALD.\**

"I have received the honour of your Lordship's letter of the 17th, enclosing a note which had been written to you by the Portuguese government, than which nothing can surprise me more. It is a complaint made where they confess that no offence has been given.

"I have long been fully sensible of the jealousy entertained by the French, of our ships being supplied with refreshments from Portugal; and, anxiously desirous that a nation between which and Great Britain so long and so faithful a friendship has subsisted, should not be subjected, on that account, to disagreeable discussions with our enemy, I have forborne to send ships to their ports. Those that have been at Lagos of late were merely there by chance, for the purpose of refreshing their crews. It is reported to me, that they have been supplied, but not in that free and liberal manner to which, by treaty, the subjects of His Majesty have a right, and which is due to the friendship and affection which have been so long established between the two countries. Instead of the free use of the market, where they might furnish themselves with fruits and fresh provisions, they have been limited to a portion insufficient for half the crew; and even

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\* Dated on board the "Queen," off Cadiz, April 26, 1806.

the number of casks of water which they were to have, has been determined.

“ If, by the other means of being supplied to which the minister of Portugal alludes, is meant that of taking such supply secretly by night, I did give strict orders that no such illicit correspondence should be held. What is due to neutrality we have a right to receive in the face of day. If Portugal be unhappily in such a situation that she must veil her friendship, and look sternly on those whom she was wont to welcome with open arms, her misfortune is to be deplored ; but I never will allow the dignity of the British flag to be questioned by the ships engaging in an intercourse which will not bear to be looked upon by the whole world.”

## PRACTICAL HINTS.

## NAVAL TACTICS.

THE vague definitions of the several authorities who have treated on the subject of naval tactics, added to the ambiguous and often perplexing tendency of the terms which tacticians employ for the specific purpose of *contradistinction*, have not only deterred officers from pursuing a study which, when clearly comprehended, is of the first professional importance, but have also, in the execution of evolutionary movements, not unfrequently led to considerable confusion afloat.

It is not intended to dwell upon the propensity of tacticians to mystify movements which are often simple of solution, nor to dilate upon their constant *misapplication* of terms. A few examples will

suffice. For instance, tacticians speak of the “*second ahead*,” and the “*second astern*,” when they endeavour, by their own demonstrations, to shew, that it is the ship *next* in succession ahead, and *next* in succession astern, which they immediately mean; forgetting that the word *second* bears a close affinity to the numerical term *two*. Besides, if there be a *second* ahead, and a *second* astern, the inference is, that there must be, somewhere, a *first*, from which to “commence the count,” or, as sailors say, to “begin the tally.” But with tacticians this is not the case, for by *their* mode of calculation the second frequently becomes the *first*, and the first as frequently the *second*.\* It would, however, seem that the tactical term of second is an

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\* To demonstrate this matter beyond dispute, the following case is supposed. Ten vessels are ranged in the order-of-battle, and the admiral makes the signal to No. 4. to support the second in the line ahead. A stranger to the “*second*” system of reckoning, proceeding upon correct arithmetical principles, will immediately advance to the succour of *two* in the order of battle; but here, according to tacticians, he will be “out in his reckoning,” and perhaps lose his commission for adhering too rigidly to the rules of “*Cocker*.” The fallacy of this reckoning may be further demonstrated:—a man starts to walk a mile from A. Does the pedestrian count A. at starting, as *one*, or does he await until he arrives at B., to complete his mile? Because, if A. is to be counted as *one*, B. must be reckoned as *two*. Paid porters, or drivers of “*jarvies*,” would turn this *second* system of reckoning to profitable account.



old-established \* favourite, though it would be difficult to trace who was the first afloat that adopted this second system of reckoning.

Again, tacticians treat of the "line ahead," the "line abreast," the "line of battle," the "line of bearing," the "line of sailing," (a strange phrase, by the by, as if *any line* a fleet can form when not actually at anchor can be any thing else but a line of sailing,) "the line of retreat," and the "bow and quarter line."

If a little attention be given to the subject, or a little trouble taken to "overhaul" the several lines of "*contradistinction*," it will be found that, in certain cases, when put into practice, the majority of the *list* will assume one and the same *identity* of form,—in other words, one and the same position.

In a work recently published upon "Naval Tactics," the "line of bearing" is thus defined :—†

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\* Only that the author of these pages has ever held the olden school in the highest veneration, he might here be inclined to cherish the notion, that our nautical forefathers preferred the adoption of the *pugilistic* phrase to the more appropriate application of the numerical term.

† It is by no means the purpose of the author to depreciate the utility of tactics; but it may be safely asserted, that instead of making the subject intelligible to the naval reader, it would almost appear to have been the aim and end of those who have treated upon the theme, to mystify the "*science*" in a most unmerciful degree.

“The line of bearing is that by which a vessel is *impelled*, to enable her as near as possible to approach the wind.”

The *impelled line* is left to the elucidation of others.

Again, the following passage, demonstrating a diagram, appears in the same work :—

“If the ships Q. R. or S. T. be ranged on one of the two lines of bearing, and are not *standing* on the line of bearing *on which they are ranged*, are said to be in line of *sailing*; thus, the ships Q. R. are on the starboard line of sailing, because, being ranged on the starboard line of bearing, they are sailing before the wind, and the ships S. T. are in larboard line of sailing, because, being ranged on the larboard line of bearing, they are *standing* to the wind on the starboard tack.”

The author of these pages perfectly comprehends the position of sailing which the translator of the work in question would endeavour to convey; but the words marked in italics, the confused phrase of not *standing* on the line of bearing on which they are *ranged*, are every way calculated to capsize the under-*standing* of the professional student. The “line of sailing” is an absurd phrase, and should be abolished, as a technical term of no definite meaning.

Another writer, defining the “line of bearing,” thus flourishes, or rather flounders, in print :—

“The line of direction which a fleet preserves in either of the orders, is termed the line of bearing of the order. Thus, the line of bearing of the order-of-battle is six points from the wind on either tack ; the line of bearing of the order of retreat is *across* the wind ; and the line of bearing of the order of sailing is the *course* steered !!”

What absurdity ! the line of bearing of the *order of sailing* is the *course steered* !!! The *course* this writer should have steered is sufficiently obvious.

The limits of this work will not admit of any thing like a muster of the numerous anomalies and *misapplied* expressions to be found in the ponderous tomes\* which have been published on *naval tactics* ; nor can space be afforded to enter into any lengthened analysis of the “science.” To simplify the subject, and to render, for practical purposes, more easy the execution of those evolutionary movements which are often requisite to be performed by a fleet at sea, are the only objects aimed at by the author of these volumes.

The *secret* of the science may be said to consist in

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\* The hypothetical cases of tactical writers are so encumbered with “*remarks*,” and so clogged with “*conditions*,” that it is difficult to determine which the theorist intends to illustrate his position—the *original* problem, or the appended “*remark*.”

comprehending the principle of each line of bearing—"starboard" and "larboard." Unless the utility of either line, or rather the *range*, (for both lines of bearing are merely those two lines upon which, according to the direction of the wind, vessels composing the columns or divisions of a fleet are relatively ranged,) be clearly conveyed to the mind, naval evolutions, and more particularly simultaneous movements, will seldom, if ever, be performed with *precision*; the execution of such movements will be merely a matter of *guess*.

The following definitions and figures are offered to illustrate the

#### LINE OF BEARING.

THE line of bearing is a line six points from the wind, upon which line the ships composing a fleet, squadron, or column may be *ranged* in any position which will admit of their being *prepared* to form in line-of-battle,\* by means of a simultaneous movement.

Since there are *two* lines on which the ships of a fleet, "close hauled," form in line-of-battle,—namely,

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\* The line of bearing would seem to be a general expression—the line of battle, a particular case of it. It is probably to the want of a proper observance of similar distinctions, that the confusion and perplexity arising from the use of the numerous and unnecessary terms in naval tactics may be attributed.

the LINE-OF-BATTLE on the *starboard* tack, and the LINE-OF-BATTLE on the *larboard* tack, so are there also TWO LINES OF BEARING, the *starboard* and the *larboard*.

THE STARBOARD LINE OF BEARING is that line upon which the ships composing a fleet, squadron, or column may be *ranged*, whether sailing by the wind or sailing large, preparatory to forming the line-of-battle on the *starboard* tack,—which evolution is effected by means of a simultaneous movement, such as tacking, wearing, or coming to the wind “*together*.”

THE LARBOARD LINE OF BEARING is that line upon which the ships of a fleet, squadron, or column may be *ranged*, whether sailing by the wind or sailing large, preparatory to forming the line-of-battle on the *larboard* tack,—which evolution is effected by means of a similar movement to that which forms the starboard line of bearing.

Since the ships which compose the fleet, squadron, or column, when *ranged*, may, on either line of bearing, be *standing* with their heads across that which they are collectively required to preserve,—it follows that they will sometimes be on the *larboard* line of bearing, when *standing* on the *starboard* tack; and at other times on the *starboard* line of bearing, when *standing* on the *larboard*\* tack.

#### CASE I.

THE two following figures will clearly and fully illustrate the foregoing observations:—

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\* This may serve to solve that apparently paradoxical purport to be found in the pages of the “GENERAL SIGNAL BOOK,” “Preserve the *starboard* line of bearing, though sailing on the *larboard* tack, and *vice versa*.”

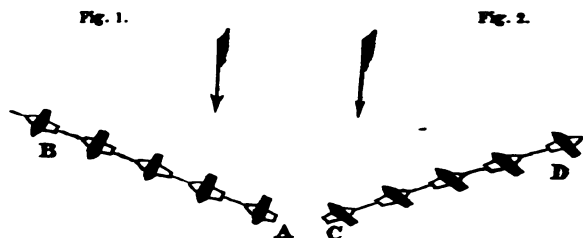


FIGURE I.—Suppose the wind be at north, *AB* a line W. N. W. and E. S. E., or six points from the wind, and that the ships ranged on it are sailing large in the S. W. direction. It is clear, that if they haul to the wind *together*, on the starboard tack, they would form the line *ahead*,\* or line-of-battle on the *starboard* tack. The ships (marked in black) are accordingly on the *starboard* line of bearing, sailing large on a S. W. course.

FIGURE II.—Again, the wind being at north, as above, let *CD* be the E. N. E. and W. S. W. line, or six points from the wind, and the black figures the ships close hauled on the starboard tack. It is evident, that if they wore or tacked *together*, they would form the line ahead, or line-of-battle on the *larboard* tack. The ships marked in black are accordingly on the *larboard* line of bearing, though standing on the *starboard* tack.

#### THE LINE-OF-BATTLE.

A FLEET is formed in the line-of-battle, when the ships composing it assume a position of sailing in *succession*, six points from the wind on either tack.

\* The reader will perceive, as has been already observed, that in this instance the line ahead, and line-of-battle, assume the *same* position.

## THE ORDER OF SAILING

Is that particular position in which a fleet is formed for the purpose of preserving order and regularity in the several columns, whilst cruising or steering a certain course.\*

## THE LINE ABREAST

Is that position of sailing in which a fleet is formed when the ships composing the column or columns pursue a course parallel to each other, and each is brought to bear exactly abreast of the other. This position of sailing is commonly used when the wind is right aft.

## SUCCESSIVE MOVEMENTS.

ALL manœuvres to be performed in succession,† require that the ships composing the column or columns await the execution of the desired movement, until each vessel relatively arrives in the wake of her immediate leader.‡

\* The number of vessels composing the fleet, together with the locality of the cruising ground, will always determine the number of columns into which it may be desirable to divide the order of sailing. In a large fleet, and with plenty of sea-room, many officers prefer sailing in *three* columns; but for general purposes, and particularly in confined or narrow channels, the preference must be given to *two*.

† In all successive movements, attention should be paid to the preservation of *distance* in the line, and particularly when tacking in succession, to allow sufficient time for the relative leader to brace-up and gather way, before the ship next in succession astern heaves in stays.

‡ How much better this term than the "*second* ahead."

## SIMULTANEOUS MOVEMENTS.

SIMULTANEOUS movements are always to be recommended. They are not only more convenient and expeditious, but are also, especially in bad weather, attended with more of safety than those which are executed by ships in succession.\* When evolutions are performed *together*, all ships are under the *same* circumstances at the *same* moment,—and, hence, relative distances are liable only to be slightly disturbed.

## CHANGING POSITION.

## CASE II.

FROM the line-of-battle on the starboard tack, wind north, fleet heading W. N. W., to *change* to a position of sailing which requires the starboard division to sail large, steering south, on the larboard line of bearing; and the larboard division to steer the same course, preserving the starboard line of bearing. This position of sailing, it will be seen, forms an obtuse angle, and assumes a figure which may be turned to available account, if chased by a superior force.†

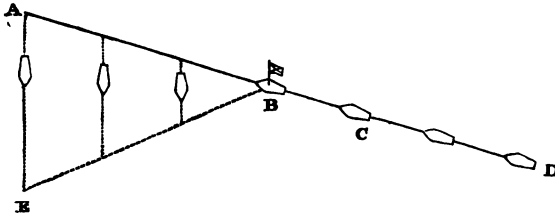
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\* Those officers who have served under Cornwallis, Gardiner, Cotton, and others, will remember that the interval between the first making of the signal and the completion of the manœuvre by the sternmost ships, occupied sometimes a period of *four hours!* During the whole of this time, it was necessary to keep the “watch,” and, if the weather was bad, “all hands,” upon deck; consequently, at night, it was exceedingly harassing to the crews of the fleet.

† This form of sailing is termed by tacticians, the “line of retreat;” a manifest misnomer, because, the order of sailing entirely depends upon the *two* divisions preserving with precision the *two* lines of bearing.



The method of executing this movement with promptitude and precision, is as follows:—



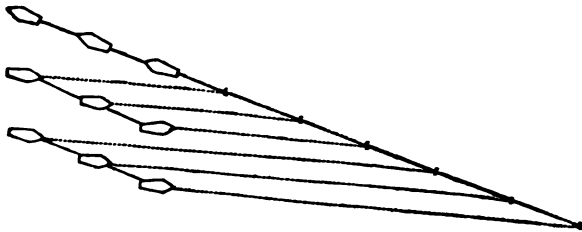
The ships are formed in the order of battle on the starboard tack. *B* bears the flag of the commander-in-chief. The larboard division, *CD*, remains stationary, but ready to bear up *together*, the moment the ships of the starboard division, *AB*, are relatively ranged on the larboard line of bearing, *EB*. The starboard division, particularly the van ships, will increase sail according to the distance each has to run respectively, to bring the admiral on the larboard line of bearing.\*

#### CASE III.

FROM THE ORDER OF SAILING in three columns on the starboard tack, to form the line-of-battle on the weather column—

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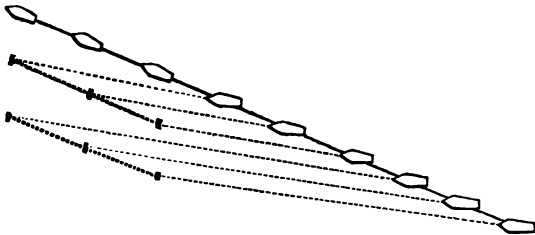
\* Some tacticians effect this evolution by both divisions bearing-up together; but this method does not complete so expeditiously the order of retreat, inasmuch as the starboard division would have to press considerable sail to reach the range *EB*, or larboard line of bearing. The division *CD*, including the admiral, *B*, may, under easy sail, keep the van ships of *AB* a considerable time in getting up to the desired direction.



“The weather column keeps under easy sail, while the centre and lee lines tack or wear together, and keep two points away till they arrive in the wake of the van,”\* when each ship tacks and assumes her station.

CASE IV.

FROM THE LINE-OF-BATTLE on the starboard tack, to form the order of sailing in three columns—



“The weather column keeps under very easy sail, merely to keep the ships under command. The centre and sternmost columns keep away one point together, preserving order, the latter making more sail than the former, as it has twice the distance to run. As soon as the leading ship of the centre brings the leading ship of the headmost column exactly in the wind’s eye of her, (or rather a little before, in order that she may not shoot ahead of her,) the ships of the centre column haul to the wind together.

\* Vice-Admiral Raper’s “Tactical Evolutions.”

“The sternmost column preserves the same movement as the centre, and on arriving in its station, hauls to the wind together.”\*

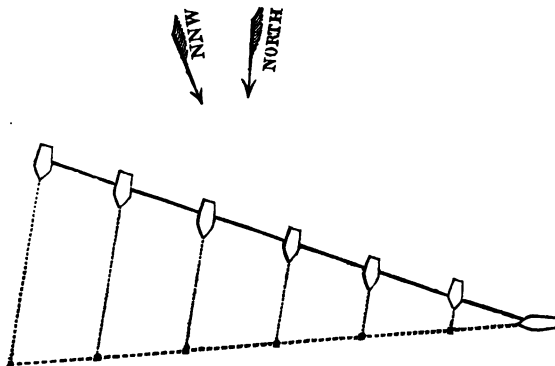
It would be an endless task to demonstrate the many hypothetical cases which tacticians assume in situations which relate to “Interchange of Stations,” and to the complicated movements of inverting columns. Suffice it to say, that many of these paper positions are impossible to put into *practice*.

#### SHIFTS OF WIND.—RESTORING ORDER.

##### CASE V.

THE FLEET IS FORMED IN THE ORDER OF BATTLE ON the starboard tack, when the wind, which has been at north, suddenly shifts to N. N. W. The line is required to be *restored* on the same tack. The annexed figure shews the sternmost ship's position after her head has broken-off from W. N. W. to *west*.

To restore the order of battle, the following method will be found the most expeditious:—



\* Vice-Admiral Raper's "Tactical Evolutions."

The sternmost ship remains stationary, and is to be considered as the *pivot* ship, upon which the other vessels are to form the line anew. The ships ahead bear up *together*; the van ships increasing sail according to the increase of distance they have relatively to run. The course to steer, for the vessels which bear up together, is previously to be ascertained, as given in the rule below; the ships arriving ahead of the pivot astern, will haul to the wind, and heave to; and this movement, and subsequent method of remaining stationary, must be followed by each ship successively, until the line is again restored.\*

RULE FOR ASCERTAINING THE COURSE FOR SHIPS TO STEER FROM ONE TO FOUR POINTS:—Deduct from eight (eight being one-fourth of the compass) one-half of the number of points which the wind has changed. For example: suppose the wind has *headed* four points, deduct two, half the number it has headed, from eight, and six will remain, the number of points required for the ships to bear away. So that if the wind had been at north, when the fleet on the starboard tack were heading W. N. W., and it suddenly changes to N. W., the heads of the ships of the fleet would break off to W. S. W. The

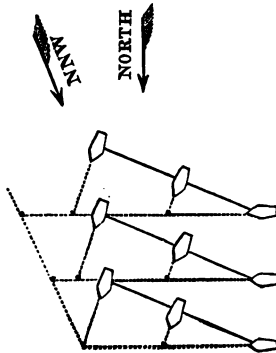
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\* Tacticians effect this object in a different way, viz.—commencing the movement of bearing-up from the van in the order of succession; and sometimes, in fleets, each officer selects his own course. Both methods are subject to objection; the one produces *delay*, and the other *confusion*. And it should always be borne in mind, that when vessels performing simultaneous movements are compelled to steer a course *parallel* to each other, *accidents* can never occur.

course required to steer, in order to form the line anew on the pivot-ship astern, will then be south. This is a simple rule, and one of ready recollection.

## CASE VI.

TO RESTORE THE ORDER OF SAILING, when the fleet is formed in three columns, and the wind has drawn forward two points.



The course being previously ascertained for the ships composing the different columns to bear up together, the sternmost ship in each column heaves-to, whilst those pertaining to their respective columns bear-up simultaneously, and proceed to form on the

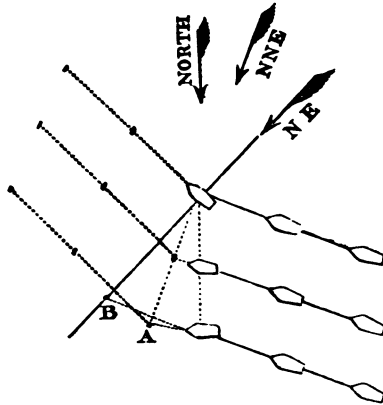
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NOTE—The same method may be pursued if the wind shifts three points. But if it shifts four or more points, it is recommended by Admiral Raper, to let the ships pay round on the other tack; and then form a new order of sailing. This practice is recommended by the admiral, from the probability of the ships being taken aback, when a shift of wind exceeds more than four points.

pivot-ship of their relative lines; the leader of the weather-line taking up a position in the wind's-eye of the leaders of the two other columns.

## CASE VII.

To restore the order of sailing when the fleet is formed in three columns, and the wind has drawn *aft* two points.



The diagram above shews that the only ship which remains in her station is the *leader* of the weather column; therefore the leader of the weather column hauls to the wind, and keeps under easy sail, followed by the ships of that column as they arrive successively in his wake. The leaders of the centre and lee columns, followed by their ships respectively in succession, proceed on the courses pointed out to regain their stations in the new figure, and then haul to the wind.

RULE.—“The rule serves for any number of points the wind may draw aft : thus, if the wind had shifted to N. E., the leader of the lee column, instead of steering for A, (the position in which he will haul to the wind when the wind shifts to N. N. E.,) will proceed to B, and then haul to the wind, followed by the ships of that column in succession.

“The leader of the centre steers the same course as the leader of the rear ; the latter has been selected to illustrate the figure, having a greater distance to run.” \*

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\* Admiral Raper's “Evolutions.”

## NAVAL BATTLES.

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THE profession are already acquainted with the published production of a gallant and distinguished flag-officer,\* entitled "Naval Battles, critically reviewed and illustrated," &c.

To discuss minutely the many subjects which have come under the rear-admiral's critical notice, is not the intention of the present work. This paper, therefore, will only embrace those battles which have more particularly contributed to the glory of England; commencing with the action of the celebrated "1st of June, 1794," being the first general engagement fought in the French revolutionary war.

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\* Rear-Admiral Sir Charles Ekins, K. C. B., &c.



FIRST OF JUNE.—Admiral Ekins, after entering into considerable detail, illustrative of the various positions occupied by the hostile fleets in their partial encounters on the preceding days, of the 28th and 29th of May, represents the British fleet, on the memorable morning of the “1st of June,” to be to windward of the enemy, in a line-a-head\* on the larboard tack, parallel to the latter. The British fleet, with the view of bringing the enemy to battle, is next described as bearing up together in a line-a-breast, each ship steering exactly for her opponent in the line, and thus endeavouring to break through the revolutionary fleet, and bring them to close action to leeward. In reference to this mode of attack, Admiral Ekins observes, that “the British admiral (Lord Howe), finding his fleet to occupy a line parallel to that of the enemy’s, determined upon a vigorous attack upon his whole line, rather than lose a moment by making a different arrangement; though it will be admitted, that an attack on a particular part of it, by a superior force, might have been attended with greater success upon this occasion.”

There can be no question but that his lordship was heartily tired of fighting in fogs. He was, moreover, annoyed by the liability of his signals to be mistaken, and, above all, by the egregious blunders (to say the least of them) committed by the leading ship of his line (the

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\* The line-a-head, it will be seen, the rear-admiral employs as synonymous with the line-of-battle.

“Cæsar”) on the preceding days, of the 28th and 29th of May. Taking, therefore, all circumstances into consideration, perhaps it may rather become a matter of question whether the mode of attack adopted by his lordship, as being decidedly the most simple, was not the most likely to ensure success; as doubtless his lordship naturally conceived, that, by previously directing each ship to place herself close alongside of her opponent in the line, no material mistake either as to signal or “order of sailing” could possibly occur. With respect to his not following the flight of the enemy, Sir C. Ekins observes, after alluding to the circumstance of a signal *said* to have been made by the second in command, (Admiral Graves,) for “a *general chase*,” that—

“Lord Howe, in countermanding this signal, probably judged of the state of his fleet by the condition of the *Queen Charlotte*, *Queen*, *Defence*, and some others, more severely handled than the rest; for it is well known,” adds Sir Charles, “that there were still a sufficient number left to have stopped the fugitives; but the responsibility was entirely his own, and it appeared to him (Lord Howe) that the greatest number of the British fleet were at this time so disabled or widely separated, that they could not be detached after them.”

Whilst it is to be presumed that these observa-

tions are well founded, it may not be amiss to remark, that if, from casualties or unforeseen occurrences in action, a commander-in-chief has not the power of making himself exactly acquainted with the state of his fleet, those captains whose ships are in a condition to chase an enemy already in flight, ought not to hesitate a moment to pursue them, or at least to *ask permission* to do so by signal. No officer, on such an occasion, need question the propriety of his conduct, or at all apprehend that his senior will view it as officious.

ST. VINCENT'S.—The engagement of the 14th of July, off Cape St. Vincent, may be said to be one in which the finest possible field was afforded for exhibiting a knowledge of naval tactics, and consequently for displaying to advantage the ability of Nelson. The British, consisting of only fifteen sail of the line, were opposed to an enemy of twenty-seven in number.

It is well known that, in this action, Sir John Jervis, and the captain of the fleet, Sir Robert Calder, differed in opinion as to the practicability, as well as the propriety, of effecting certain proposed evolutions, and that, after the engagement commenced, Nelson (then commodore) thought fit

to pursue a system of attack for himself, which was adopted by several others.

The relative positions of both fleets, when first discovered by each other, were as follow :—The Spanish fleet was standing on the starboard tack (the wind W. by S.), scattered, and detached in two separate divisions, the weather part being the most numerous. The British fleet, in the order of sailing in two columns, was also standing on the starboard tack astern of the enemy ; the weather division of the Spaniards being on the weather bow of the British, and the lee division of the former a little on the lee bow of the latter. From the “ order of sailing ” in two columns, Sir John Jervis, with the “ greatest celerity,” formed his line-of-battle into one line-a-head, carrying all possible sail to get between the two divisions of the enemy, so as to prevent the weather part forming a junction with their division to leeward. This he had completely effected, when both divisions of the Spaniards tacked in succession ; the weather part edging away off the wind on the larboard tack, trying to get round the rear of the British, (all of which were yet on the starboard tack,) until Nelson, perceiving their intention, immediately *wore* round to intercept their progress, whilst the lee division of the enemy were hugging the wind on the larboard tack, endeavouring to weather the van of the British. This attempt was rendered fruitless by the greater press of sail carried by the latter ; and the Spaniards, failing in their object, were exposed to a heavy fire from a few of the leading ships of Sir John Jervis’s centre. Previously, however, to this partial encounter with the lee division of the

enemy, the British admiral, intent upon making an attack upon the rear of their main body to windward, had directed his fleet, beginning with the van, to "tack in *succession*," pursuant to his original mode of attack. On tacking at this period, in *succession*, Sir C. Ekins remarks, "When we compare the position of the fleets with the signals of the commander-in-chief, we are led to imagine that the *rear* of the enemy to *windward* was the object it was his intention to attack;" and that, after having placed himself between the weather and lee divisions of the enemy, so as to prevent their junction, "he might very probably have succeeded to his wishes, by cutting off many of their sternmost ships;" but "the new and important events that were taking place in the rear of Sir John Jervis's line obliged him to change his intention, and hasten to support Nelson and his followers.\* By this judicious measure he supported and covered the attack, and secured the captures made. It may yet appear, that by *wearing* the whole line in quick *suc-*

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\* The following letters passed between Nelson and Collingwood on the day succeeding the battle.

"Irresistible, 15th February, 1797.

"MY DEAREST FRIEND,

" 'A friend in need is a friend indeed,' was never more truly verified than by your most noble and gallant conduct yesterday, in sparing the *Captain* from further loss; and I beg, both as a public officer and a friend, you will accept my most sincere thanks. I have not failed, by letter to the admiral, to represent the eminent services of the *Excellent*. Tell me how you are, what are your disasters. I cannot tell you much of the *Captain's*, except by note of Captain Miller, at two this morning, about sixty killed and wounded.

"We shall meet at Lagos; but I could not come near you

cession, beginning with the sternmost ships, still more might have been accomplished."

There can be no question, when the British fleet passed on the starboard tack between the two divisions of the enemy, so as to prevent a junction between their main body to windward and the smaller portion to leeward, much time was lost in

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without asuring you how sensible I am of your assistance in nearly a critical situation.

" Believe me, as ever,

" Your most affectionate,

" HENRY NELSON."

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" Excellent, February 16th, 1796.

" MY DEAR GOOD FRIEND,

" First, let me congratulate you on the success of yesterday,—on the brilliancy it attached to the British navy, and the humility it must cause to its enemies; and then let me congratulate my dear commodore, on the distinguished part which he ever takes when the honour and interest of his country are at stake. It added very much to the satisfaction which I felt in thumping the Spaniards, that I released you a little. The highest rewards are due to you and Colloiden: you formed the plan of attack,—we were only accessories to the Don's ruin; for, had they got on the other tack, they would have been sooner joined, and the business would have been less complete. We have come off pretty well, considering—eleven killed, and fourteen wounded. You saw the four-decker going off this morning to Cadix,—she should have come to Lagos to make the thing better; but we could not brace our yards up to get nearer. I beg my compliments to Captain Martin: I think he was at Jamaica when we were.

" I am ever, my dear Friend,

" Affectionately yours,

" C. COLLINGWOOD."

“tacking in *succession* ;” and that the efficacy of the manœuvre, suggested by Admiral Ekins, was exemplified by the manner in which Nelson (who commanded the *Captain* in the rear) succeeded in the execution of this movement.

CAMPERDOWN.—The next general engagement to which allusion is made, is that of Camperdown, an action which must excite, in every officer and seaman in the service, the utmost admiration of the British commander in this engagement. An extract is here subjoined from the admiral’s official letter, to explain the position of both fleets previously to commencing, as well as ending the engagement.

“At nine o’clock in the morning of the 11th,” says Admiral Duncan, “I got in sight of Captain Trollop’s squadron, with the signal flying for an enemy to leeward ; I immediately bore up and made the signal for a general chase, and soon got sight of them, forming in a line on the larboard tack to receive us ; the wind N.W. As we approached I made the signal to shorten sail, to connect the squadron : soon after I saw the land between Camperdown and Egmont, about nine miles to leeward of the enemy ; and finding there was no time to be lost in making the attack, I made the signal to bear up, break the enemy’s line, and engage them to leeward—each ship her opponent, by which I got between them and the land, whither they were fast approaching.”

In this battle, the hostile fleets were equal in numerical force, there being exactly on both sides sixteen sail of the line. By the preceding extract

from Admiral Duncan's despatch, the reader is to infer that the admiral availed himself of no other advantage, as to tactics, but that of breaking through the enemy's line, each ship attacking her opponent to *leeward*. This was effected with facility, from the circumstance of the British possessing the weather-gage, whilst it answered the double purpose of striking terror into the enemy, as well as probably preventing their ultimate escape, by getting the British fleet between him and the land. It, however, may be asked why the British admiral preferred this mode of attack to that of bringing his whole force to bear upon a part of the enemy's line? To this objection there are two distinct answers. In the first place, the ships which composed the British fleet were not only of a very inferior order, dull sailors and very unmanageable, but were also very indifferently manned, and by no means calculated to perform with precision those evolutions which an expert tactician might have deemed expedient for the purpose of doubling on the enemy's line; and in the next place, as it appears by Lord Duncan's despatch, his principal object was to get between the entire of the enemy's fleet and the land, so as to prevent the possibility



of any part of them escaping to leeward. Had the admiral's intentions been strictly fulfilled, and had each ship of the British placed herself close alongside to leeward of her opponent in the line, thus following the example of their leaders, not a single ship of the Dutch would have escaped; whereas, it appears that the part of the enemy's fleet (namely, the centre,) which was not immediately attacked by either of the British admirals, escaped into port. Thus the maxim strictly holds, that the tactics alone of the chief in command can avail little in action, unless accompanied by promptitude and intrepidity in *all* concerned in the conflict.

THE NILE.—The next action, in point of time, is that of the Nile,—a battle not less important in its results than, at that period, novel in its nature, from the circumstance of its being the only general and decisive engagement, during the French revolutionary war, fought *at anchor*.

When the enemy were discovered in Aboukir Bay, Sir Horatio instantly directed his course towards them, and found them at anchor, in a line extending from N. W. to S. E. They were at single anchor, with springs on their cables, and riding head to wind, which was from N. W. To approach them, it was necessary to sail round an island, and a reef projecting from it,

to the distance of several miles from the point on which the usual fort of *Alouette* stands. The wind was perfectly fair, but unfortunately, in rounding the reef, the *Zealous*, the leading ship, ran aground, and could not be got into action. After this accident, Nelson found himself with ten ships only (three having taken very much water) to fight thirteen of the enemy, and several of these of superior force to any of his. The island also, fortified with mortars and some heavy guns, was to be passed: yet he determined on an immediate attack, and made the signal to attack the van and centre of the enemy. It was near six in the evening when he closed\* with them. About half the ships got between the enemy and the shore, either by cutting through their line, or by sailing round the head of it; and the rest attacked on the outside. All dropped their anchors close in front† of their opponents: by this disposition, some of the French line were doubled on, and all that were engaged on the land side were taken unprepared. The *Zealous* fired three broadsides before a gun was returned from that side.‡ The enemy began firing as soon as our ships came within shot. The *Zealous* dismasted the *Guerriere* (French van ship) with three broadsides, and completely beat her in five minutes. The six headmost

\* The action was fought August 1st, 1798.

† It is to be presumed, that those of the British ships which took up positions abreast of their opponents, anchored by the stern.

‡ This explanation is very defective. Sir Samuel Hood means, before a gun was fired from the landward or larboard side of the ship opposed or alongside of the *Zealous*.

ships were taken possession of the first night, and the *L'Orient* blew up."

The position of defence occupied by the French had been deemed previously impregnable by their chief. It was not until too late that he perceived the error he had committed, in exposing his *van* to so formidable an attack, without its being able to receive any timely support from his rear.\* It is true, some of the ships had taken the precaution to put "springs on their cables;" but in all probability, from the acuteness of their angles, they became totally useless. But Nelson left nothing unprovided for. His superior skill consisted, not so much in *forcing* the enemy to fight,—which they, being at anchor, and "embayed," could not avoid, if he chose to break in amongst them,—but in bringing his force to bear principally upon their *van* and centre. Had he indiscriminately made a general attack on the whole French line, the pro-

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\* Napoleon, speaking of the "*Battle of Aboukir*," asserts, that "had Villeneuve weighed and supported the *van* of the French squadron, he would have *decided* the action." Buonaparte appears not to have taken into account the direction of the wind, which was "*dead-on-end*." No allusion is made to the circumstance of *Villeneuve*, after cutting his cables on the following afternoon, *forgetting* to *decide* the day.—Villeneuve, in fact, decided in favour of *flight*.

babilities are, that the results of the victory would not have been so decisive, and that, in an over-anxiety by this means to render the capture of the whole certain, a greater number might have escaped.

The BATTLE OF TRAFALGAR, though it stands on the highest pinnacle of fame as to its results, still continues to be a theme for tactical discussion. Some of the ablest of the contributors to Admiral Ekins's work have expressed themselves in terms very decidedly at variance with each other on the tactics of our immortal hero at Trafalgar, more particularly as to his mode of bringing his fleet into action.

ANONYMOUS REMARK.

"THE mode of attack adopted with such success in the Trafalgar action appears to me," says the writer, "to have succeeded—from the enthusiasm inspired throughout the British fleet, from their being commanded by their beloved Nelson; from the gallant conduct of the leaders of the two divisions; from the individual exertions of each ship after the attack commenced, and the superior practice of the guns in the English fleet.

"It was successful, also, from the consternation spread through the combined fleet, on finding the British so much stronger than was expected; from the astonishing and rapid destruction which followed

the attack of the leaders, witnessed by the whole of the hostile fleets—inspiring the one, and dispiriting the other; and from the loss of the admiral's ship early in the action.

“ The disadvantages of this mode of attack, (alluding to the attack made by the British, formed in two columns, from to *windward*,) appear to consist in bringing forward the attacking force in a manner so leisurely and alternately, that an enemy of equal spirit and equal ability in seamanship and gunnery would have annihilated the ships one after another in detail, carried slowly on as they were by a heavy swell and light airs.

“ At the distance of one mile, five ships, at half a cable's length apart, might direct their broadsides effectively against the head of the division for seven minutes, supposing the rate of sailing to have been four miles an hour; and, within the distance of half a mile, three ships would do the same for seven minutes more, before the attacking ship could fire a gun in her defence.

“ It is to be observed, that, although the headmost ship does certainly, in a great measure, cover the hulls of those astern, yet great injury is done to the masts and yards of the whole, by the fire directed against the leader; and that, if these ships are foiled in their attempt to cut through the enemy's line, or to run on board of them, they are placed, for the most part, *hors de combat* for the rest of the action.

“ Or should it fall calm, or the wind materially decrease about the moment of attack, the van ships must be sacrificed before the rear could possibly come to their assistance.

“In proceeding to the attack of the 21st of October, the weather was exactly such as might have caused this dilemma, as the sternmost ships of the British were six or seven miles distant. By the mode of attacking in detail, and the manner in which the combined fleet was drawn up to receive it, instead of doubling on the enemy, the British were, on that day, themselves doubled and trebled on; and the advantage of applying an overwhelming force collectively, it would seem, was totally lost.

“The ‘*Victory*,’ ‘*Temeraire*,’ ‘*Sovereign*,’ ‘*Bellerophon*,’ ‘*Mars*,’ ‘*Colossus*,’ and ‘*Bellerophon*,’ were placed in such situations on the onset, that nothing but the most heroic gallantry and practical skill at their guns could have extricated them. If the enemy’s vessels had closed up, as they ought to have done, from van to rear, and possessed a nearer equality in active courage.” (aye, there’s the rub!) “it is my opinion, that even British skill and British gallantry could not have availed. The position of the combined fleet, at one time, was precisely that in which the British were desirous of being placed, namely,—to have part of an opposing fleet doubled on, and separated from the main body.”

After speaking of the passive gallantry displayed by the French admiral, with his little skill in manœuvring, the writer adds, “It may appear presumptuous thus to have questioned the propriety of the Trafalgar attack; but it is only just to point out the advantages of every means that may be used for the attainment of great results, that the probabilities and existing circumstances may be well weighed before such means are applied. A plan, to be entirely correct, must be

suitcd to all the cases. If its infallibility is not thus established, there can be no impropriety in pointing out the errors and dangers to which it is exposed, for the benefit of others."\*

#### SECOND ANONYMOUS REMARK.

"IN one principal thing," says the writer, "I must beg leave to differ from Mr. Clerk, who lays great stress on the preference to the *leeward* position; whereas I am fully persuaded that the *weather-gage* has advantages that must preponderate. The principal reasons I have to offer, in support of my opinion, are these:—By being to windward, you can always choose your distance of engaging, and there is nothing equal to close work; and if your enemy chooses his distance, I have always found him fond of long bowls, thereby crippling you, and then making off himself with his usual gasconade. But by bearing plump down, and passing through his line, and raking him as you do so, then pelting him close on his lee-side, you strike a panic into him that he cannot easily recover. Another material point, not unworthy of notice, is,—I have always observed, on boarding a captured ship, that their decks are never so clear as with us; consequently much confusion must ensue; as by this manœuvre they are in some degree taken by surprise, and the result of

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\* "Our heroic and lamented chief knew his means, and the power he had to deal with; he also knew the means he adopted were sufficient for the occasion, and that sufficed. The Trafalgar attack might be followed under different circumstances, and have a different result: it is right, therefore, to discuss its merits and demerits. It cannot take one atom from the fame of the departed hero, whose life was one continued scene of original ability, and of superior action."

confusion always proves fatal, particularly in great matters. I am borne out in this opinion by the events which were experienced in both Lord Nelson's actions, of the Nile and Cape Trafalgar. Had Lord Rodney pursued the same system, it is probable his victory would have been more splendid. I am willing to allow that many circumstances may occur, when it might not be altogether feasible to commence a battle in this way; but as there are numerous circumstances, such as light or variable winds, lee-shores, shoal water, &c., a commander-in-chief often has a choice of difficulties; and fortunate it will be for his country if he be so happy as to possess presence of mind to use and find resources as emergencies present themselves; for I know no subject which embraces a greater variety, in all its bearings, than that of sea-fights; and it may be a useful reflection to bear in mind, that all the achievements of the renowned Nelson were owing to the felicity he displayed in the manner of his attacks, which were always of a novel and unexpected kind."

The foregoing extracts may be thus answered:—  
If the ships of the British fleet bore up in a line abreast, they would equally be subject to injury done to the masts and yards of the whole, because each single ship would become a solitary object, upon which her immediate opponent in the enemy's line would particularly direct a *raking* fire. It appears to have escaped the notice of the writers of these "Remarks," that there was a third mode of attack, by



which a fleet from to windward might have brought to battle an enemy to *leeward*, as formed after the manner of the combined fleets of France and Spain. But with the light winds and swell on the 21st of October, and the relative positions of the hostile fleets, considerable time would have been lost had the method in question been adopted by the British fleet. The two lines in the order of sailing, as formed by Nelson, might, out of gun-shot, (the wind being west,) have kept steering in a S. E. direction until they had brought the rear or rather sternmost horn of the enemy's crescent to bear N. E., or in that position which tacticians would term the "point of impunity." In this manner an American fleet would probably have attacked its enemy; but the wind was neither sufficient in force or steadiness to trust to such speculative mode of attack.

To these observations are added the *remarks* contained in the "OFFICIAL MEMORANDUM" of the immortal Nelson:—"Something must be left to chance; nothing is sure in a sea-fight, above all others: shot will carry away the masts and yards of friends as well as foes; but I look with confidence to a victory before their van could succour

The second x coordinate will in all  
 possible cases direct the movement of the line in  
 exactly the same direction as the results of the cir-  
 cumstances will admit. Therefore it is only in  
 the second case a direct halving motion. But in  
 the second case the motion is not perfectly un-  
 derstood. It is possible that in the second  
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